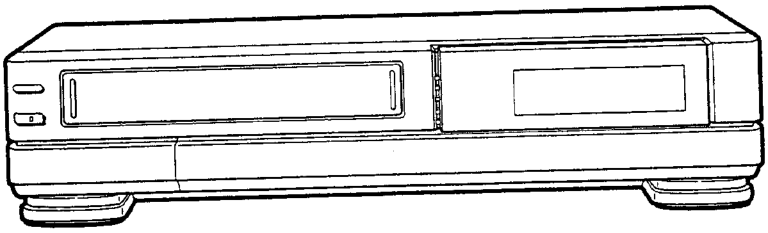
1991

MITSUBISHI

# Service Manual

## VIDEO CASSETTE RECORDER



VHS
PAL SECAM NTSC

MODEL
## HS-MS5
## HS-MS7

Only cassettes marked VHS can be used with this video cassette recorder.

## SPECIFICATION

**Tape Format** : VHS 1/2" high-density video cassette tape
**Power Source** : 100~260V AC; 50/60Hz
**Power Consumption** : Approx. 28W[MS5], 32W[MS7]
**Television System** : 625 lines, 50 fields
System CCIR B&G,I,D&K PAL
System CCIR B&G,D&K SECAM
525 lines, 60 fields
System CCIR M NTSC
**Video Recording System** : Azimuth helical scanning system
**Luminance** : Frequency modulation recording
**Colour Signal** : Low frequency conversion sub-carrier phase shift recording
**Hi-Fi Audio Recording System** : Azimuth helical scanning system, Frequency modulation, deep layer recording[HS-MS7]
**Linear Audio Track** : 1 track
**Tape Speed** : 23.39 mm/sec
(PAL/SECAM SP mode)
11.70 mm/sec
(PAL/SECAM LP mode)
33.35 mm/sec
(NTSC SP mode)
11.12 mm/sec
(NTSC EP mode)
**Record/Playback Time** : 240 min. with E-240 cassette
(PAL/SECAM SP mode)
480 min. with E-240 cassette
(PAL/SECAM LP mode)
160 min. with T-160 cassette
(NTSC SP mode)
480 min. with T-160 cassette
(NTSC EP mode)

**Heads:Video** : 4 rotary heads
**Hi-Fi Audio** : 2 rotary heads[HS-MS7]
**Audio/Control** : 1 stationary head
**Erase** : 1 full track head
**Video Input** : 0.75 to 1.5 Vp-p, 75 ohm unbalanced RCA pin plug
**Audio Input:Line** : −8dBs, 50k ohm unbalanced RCA pin plug
**Video Output** : 1.0Vp-p, 75 ohm unbalanced RCA pin plug
**Audio Output** : −6dBs, 1k ohm unbalanced RCA pin plug
**TV Tuner**
**VHF** : 48.25~112.25 MHz, 119.25~294.25 MHz
**UHF** : 471.25~855.25 MHz
**Operating Temperature** : 5°C to 40°C
**RF Channel Output** : 558~630 MHz Selectable
**Weight** : Approx. 5.5 kg [HS-MS5]
Approx. 5.6 kg [HS-MS7]
**Dimensions** : 425(W) x 92(H) x 338(D) mm
**Timer** : 8 programmes for any channels in one month/every day/every week day
24 hour digital synchronized with crystal oscillator frequency.
**Channel Selection** : 99 position Up/Down + EXT
**Deck** : F-Deck

- Weight and dimensions shown are approximate.
- Design and specifications are subject to change without notice.

MITSUBISHI ELECTRIC CORPORATION

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4. Deck Assembly

**Circuit Diagrams**

# DISASSEMBLY

## 1. Removal of Top Cover

A. Remove the four screws (ⓐ~ⓓ) retaining the top cover as shown in Fig. 1

B. Gently expand the bottom edges of the top cover, pivot cover forward, then slide toward rear in the direction of the arrows.

## 2. Removal of Front Panel

A. Remove the top cover.

B. Remove the two screws (ⓔ,ⓕ) retaining the front insulators.

C. Unfasten the six snaps (ⓖ~ⓛ) as shown in Figure, and remove the front panel in the direction shown by the arrows.

## 3. Installation of Front Panel

A. Check that the door arm is low position.

B. While holding the Cassette door open, mount the front panel to the VCR and fasten the six snaps (ⓖ~ⓛ) using gentle pressure to the front panel.

## 4. Removal of Bottom Cover

A. Remove the four screws (ⓔ, ⓕ, ⓜ, ⓝ) retaining the insulators.

B. Remove the eight screws (ⓞ~ⓥ) retaining the bottom cover.

C. Remove the bottom cover.

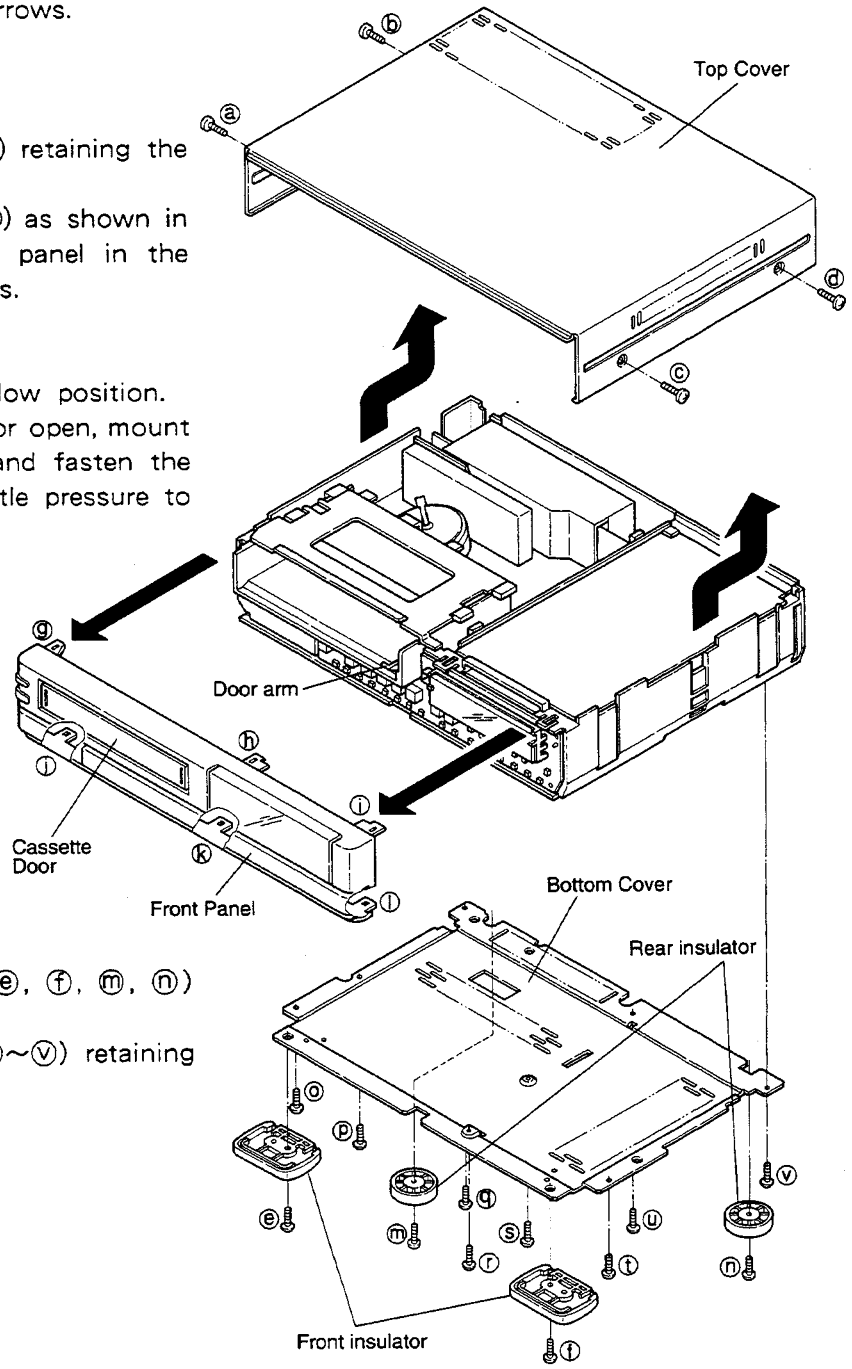

ⓑ
Top Cover
ⓐ
ⓓ
ⓒ
ⓖ
Door arm
ⓗ
ⓙ
ⓘ
Cassette Door
ⓚ
Front Panel
ⓛ
Bottom Cover
Rear insulator
ⓞ
ⓟ
ⓥ
ⓠ
ⓔ
ⓜ
ⓢ
ⓤ
ⓡ
ⓣ
ⓝ
Front insulator
ⓕ

Fig.1

# HOW TO EXECUTE CIRCUIT BOARD SERVICE

**CAUTION : BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB UNPLUG THE POWER CORD FROM THE A.C. SOURCE.**

Location of Printed Circuit Boards
(Refer to Fig. 2)

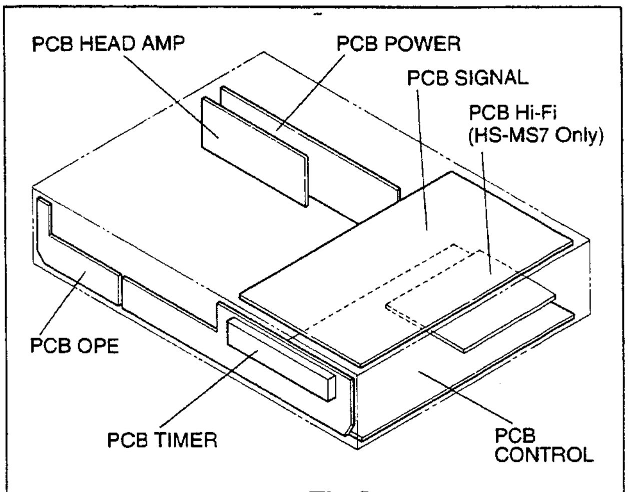

PCB HEAD AMP
PCB POWER
PCB SIGNAL
PCB Hi-Fi
(HS-MS7 Only)
PCB OPE
PCB TIMER
PCB
CONTROL

Fig.2

## 1. Removal of PCB SIGNAL

A. Remove the top cover
(Refer to page 1, item 1).

B. Remove the four screws (ⓐ~ⓓ) as shown in Fig. 3.

C. Pivot the PCB SIGNAL in the direction of the arrow.

D. To service with power on, use the insulating sheet under the PCB SIGNAL.

**Note** :

- Use caution when disconnecting flat cable connectors to avoid possible contact problems when reconnected.
- Use an insulating sheet under the PCB SIGNAL on the component side when servicing it in this position.

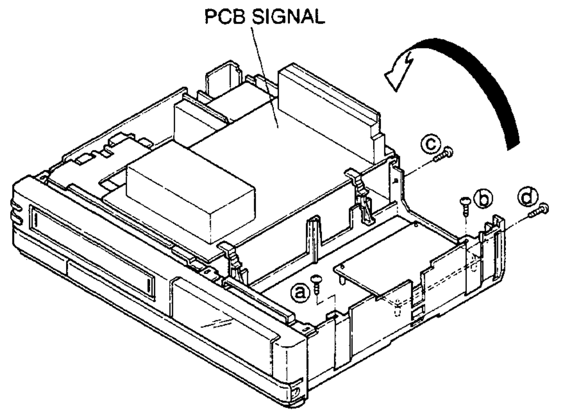


Fig.3

## 2. Removal of PCB Hi-Fi (HS-MS7 only)

A. Remove the top cover
(Refer to page 1, item 1).

B. Remove the PCB SIGNAL (Item 1).

C. Unfasten the four holders (ⓐ~ⓓ) retaning the PCB Hi-Fi as shown in Fig. 4

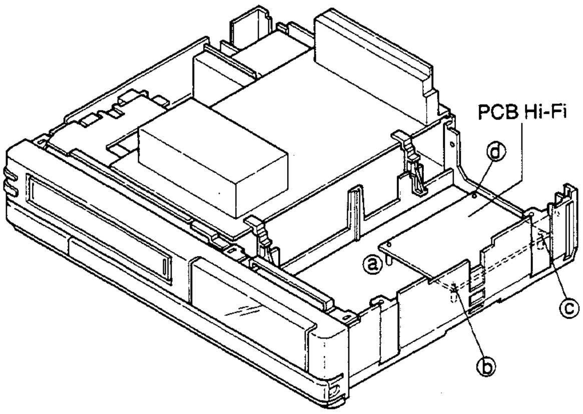


Fig.4

## 3. Removal of PCB CONTROL

A. Remove the bottom cover (Refer to page 1, item 4) and the service of the PCB CONTROL will be available.

B. If it is necessary to remove the PCB CONTROL, comply with the following steps.
  a.Remove the PCB SIGNAL (Item 1).
  b. Remove the PCB Hi－Fi (item 2.)
    < HS－MS7 only >
  c. Remove the two screws (ⓐ,ⓑ) retaining the PCB CONTROL as shown in Fig. 5.

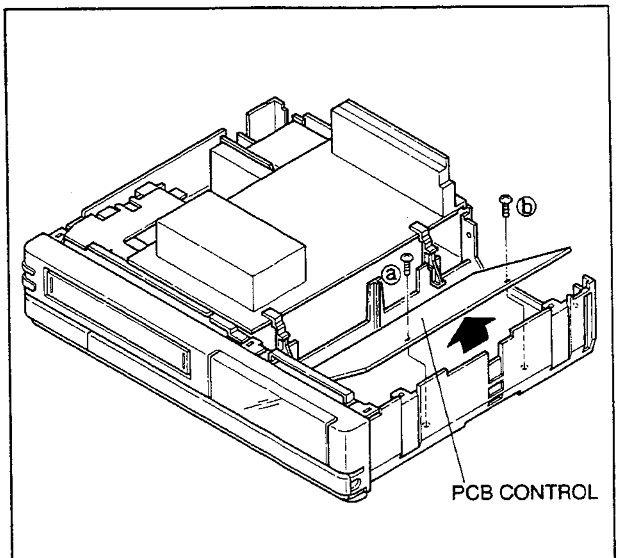

ⓑ
ⓐ
PCB CONTROL

Fig.5

## 4. Removal of PCB OPE and PCB TIMER

A. Remove the Front Panel.(Page 1, item 2).

B. Unfasten the four stopperⓐ～ⓓ, and remove the PCB OPE and PCB TIMER as shown in Fig. 6.

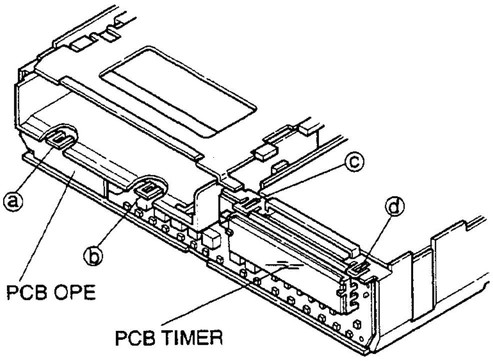

ⓐ
ⓑ
ⓒ
ⓓ
PCB OPE
PCB TIMER

Fig.6

## 5. Removal of PCB HEAD AMP

A. Remove the top cover
  (Refer to page1, iten1)

B. Lift the shield cover A upward to remove it.

C. Disconnect the ribbon cable by gently pulling cover C on the socket housing as shown in Fig. 7.

D. Remove the three screws (ⓐ～ⓒ) retaining the wire and the PCB HEAD AMP.

E. To service the solder side, remove the shield cover B, use the extension cord (859C 344040) and a short wire to ground the shield wire removed in above para. C.

F. To service the component side unsolder the soldering points of the shield case to remove it.

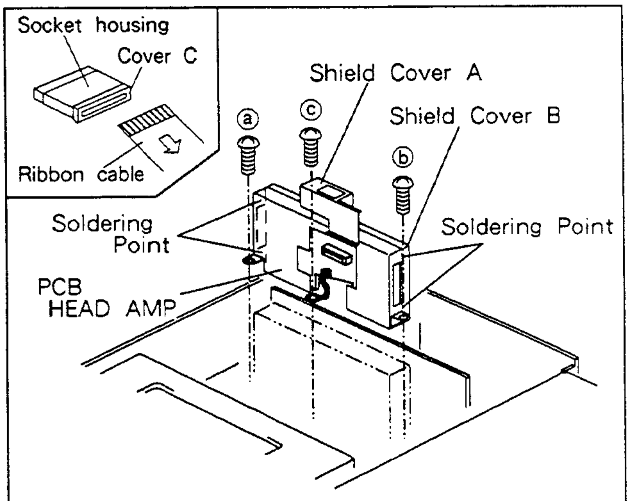

Socket housing
Cover C
Ribbon cable
Shield Cover A
Shield Cover B
ⓐ
ⓒ
ⓑ
Soldering Point
Soldering Point
PCB HEAD AMP

Fig.7

## 6. Removal of PCB POWER

A. Removal the top cover
(Refer to page 1, item 1).

B. Removal a screw (ⓐ) retaining the power bracket as shown in Fig. 8.

C. Remove the two scerws (ⓑ、ⓒ).

D. Remove the holder of AC power cord from the VCR base chassis and pull the PCB POWER upward.

E. To service the solder side, remove the shield plate.

F. To service the component side, remove the shield cover.

G. Remove the four screws (ⓐ~ⓓ), as shown in Fig. 9.

H. Unsolder the four soldering points of the PCB POWER to remove it.

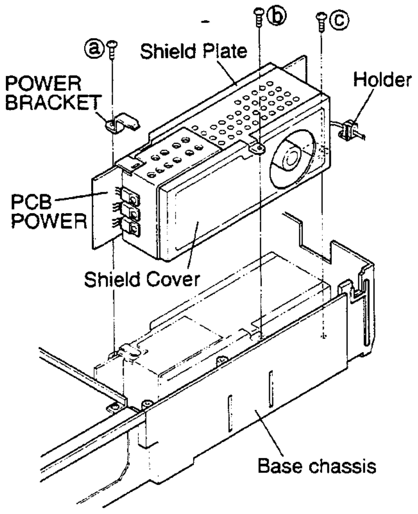

ⓑ
ⓒ
ⓐ
Shield Plate
POWER BRACKET
Holder
PCB POWER
Shield Cover
Base chassis

Fig.8

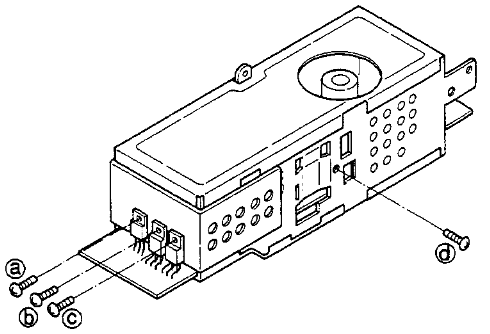
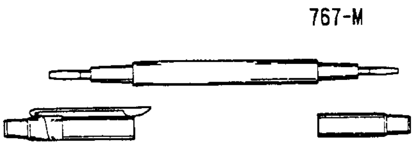
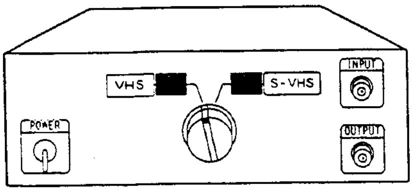
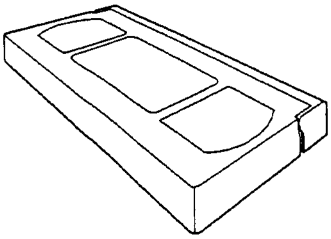
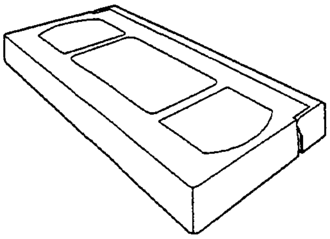
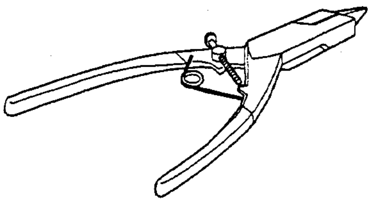
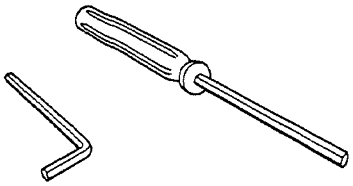
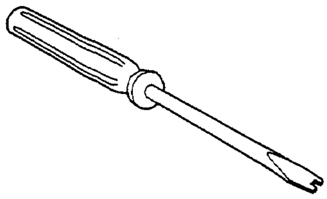
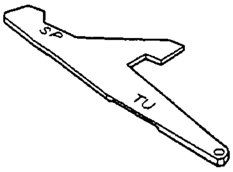
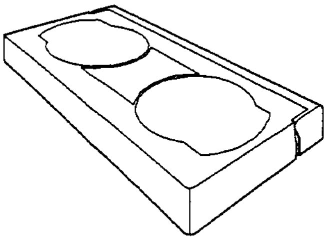


Fig.9

# ELECTRICAL ADJUSTMENT TOOLS

| | PURPOSE | - METHOD |
|---|---|---|
| **Adjustment Driver** (**859C338000**)<br><br> | The adjustment driver is intended to adjust variable resistors, trimmers, transformers etc. in the circuitry. | Select a tip suitable for the particular head of the component concerned and adjust. |
| **Carrier Checker** (**859C346050**)<br><br> | Used for the adjustment or inspection of the carrier set deviation. | Use in conjunction with the oscilloscope.<br>For detail refer to the service manual or the attached data. |
| **Alignment Tape** (**NTSC: 859C339000**)<br>(**PAL: 859C339010**)<br>(**SECAM: 859C339020**)<br> | Standard signals (VHS Standard) are recorded on the alignment tape and reproduced when required in the adjustment of Y/C circuit, audio circuit and interchangeability alignment. | Install and run in the play mode, the same as for an ordinary tape. |
| **Alignment Tape (Hi-Fi)** (**859C339030**)<br> | For adjusting the switching point of FM audio.<br>The Video signal can also be used for interchangeability adjustment of SP (4H) /LP (8H) modes. | Install the tape and run the recorder in the play mode.<br>The same as for an ordinary tape. |
| **Record Current Adjustment Jig**<br>(**859C347080**) | For Y/C recording level and Hi-Fi FM recording level adjust. | Use as per Electrical adjustment Section 15,16 and 20 of this manual. |

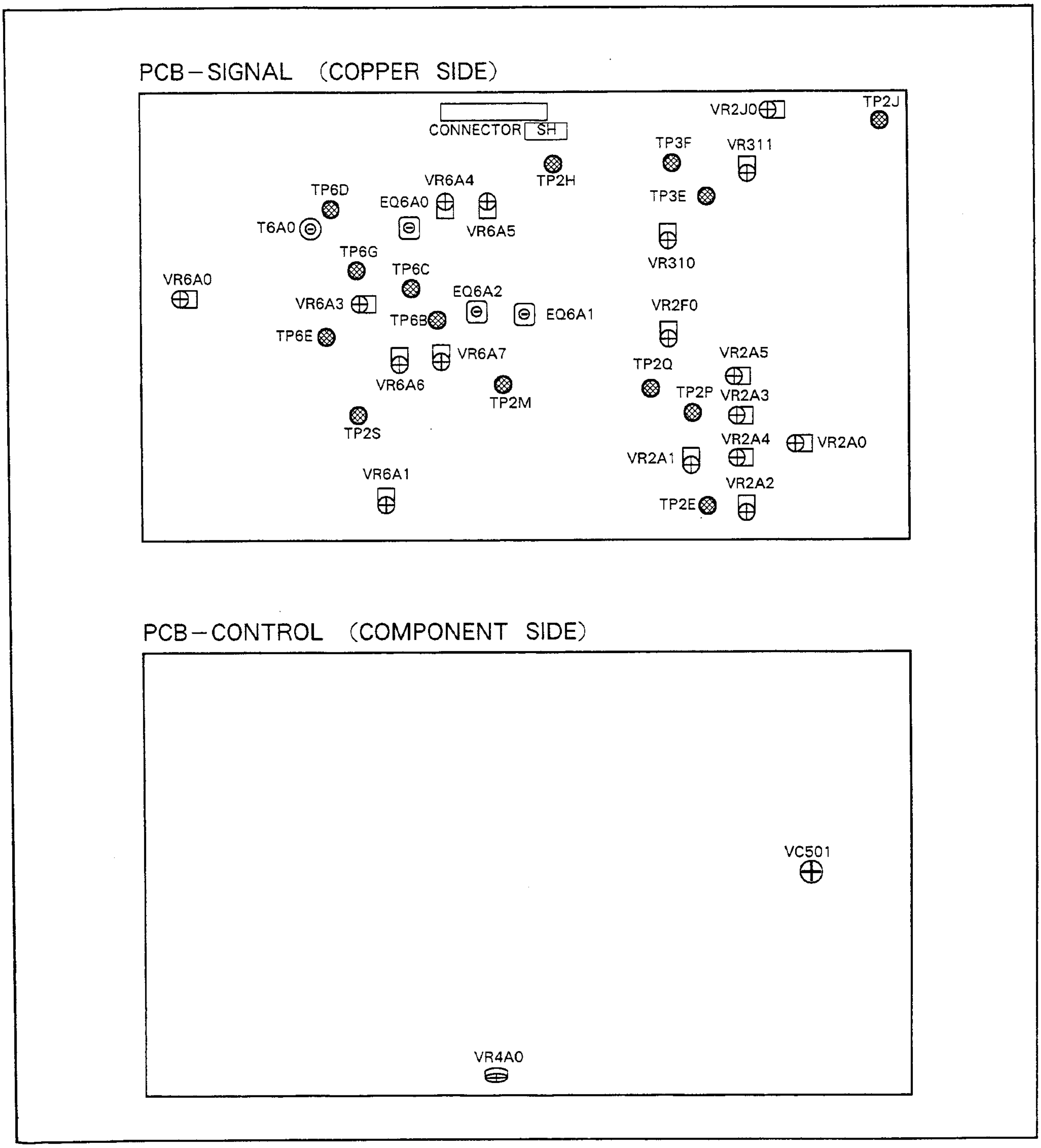
# MECHANICAL ADJUSTMENT TOOLS

| | PURPOSE | - METHOD |
|---|---|---|
| **Grip ring fixer (859C347050)**<br> | A tool for preventing the grip ring from opening excessively. | While opening the grip ring with the tips of this tool, install the grip ring on to the shaft. |
| **Hex Keys (1. 5mm)**<br><br>**(859C259020) (859C259050)** | The hex keys are used for tightening or removing hexagonal socket head screws which fasten the guide rollers. | Insert the given size (1.5mm) hexagonal socket and turn. |
| **Adjustment Driver (859C259080)**<br> | For adjustment of guide rollers. | Carefully insert and adjust guide rollers. |
| **Reel disk Adj. Jig (859C342020)**<br><br> | The height gauge is used for measuring height and parpendicula - rity of the reel disk and Takeup guide arm. | The gauge is applied to the part being measured. |
| **Back Tension Gauge (859C345080)**<br> | The back tension gauge is used for measuring the tension of the tape on the supply side. | Load this gauge in the cassette housing and run in the play mode. Read the gauge indicator. |
| **Extension Cord (859C344040)** | For PCB head Amp service. | Use when repair of the PCB Head Amp is necessary. |
| **Cotton gloves** | For changing, cleaning and handling of drum, heads and guides. | Use when handling all parts in the tape path. |

# ELECTRICAL ADJUSTMENT

Circuit adjustments become necessary, in most cases, due to the wear of mechanical parts or following the replacement of critical components such as the video head. Certain circuit defects can often cause circuit adjustments to vary considerably. Should this occur, be sure to determine the nature of the defect and repair prior to proceeding with adjustments.

Always use the test equipment recommended for a given adjustment procedure. If the appropriate test equipment is not available, it is recommended that adjustments NOT be attempted. Refrain from the indiscreet adjustment of circuit adjustment controls unless properly equipped to do so.



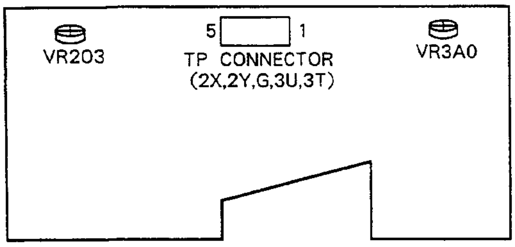
PCB-SIGNAL (COPPER SIDE)

CONNECTOR
SH
VR2J0
TP2J
TP3F
VR311
TP2H
VR6A4
TP6D
EQ6A0
TP3E
T6A0
VR6A5
TP6G
VR310
VR6A0
TP6C
EQ6A2
VR6A3
TP6B
EQ6A1
VR2F0
TP6E
VR6A7
VR2A5
TP2Q
VR6A6
TP2P
VR2A3
TP2M
TP2S
VR2A4
VR2A0
VR2A1
VR6A1
VR2A2
TP2E

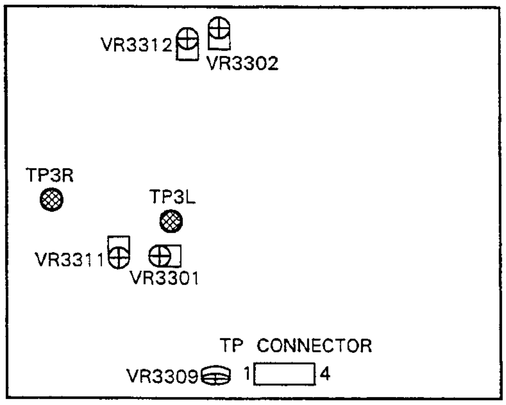
PCB-CONTROL (COMPONENT SIDE)

VC501
VR4A0

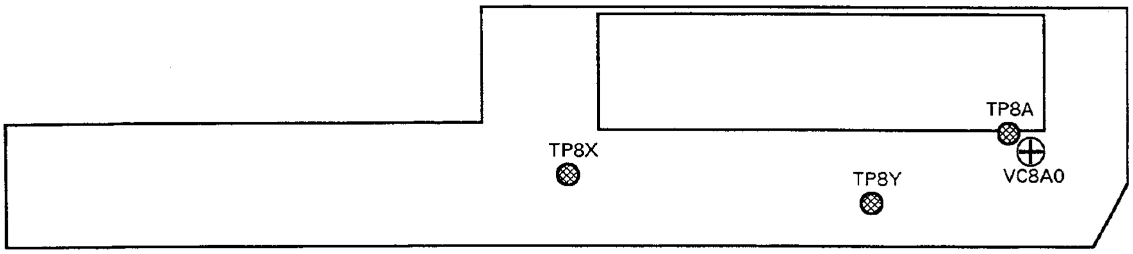
PCB－HEAD－AMP (COMPONENT SIDE)


VR203
5
1
TP CONNECTOR
(2X,2Y,G,3U,3T)
VR3A0

PCB－Hi－Fi (COMPONENT SIDE)


VR3312
VR3302
TP3R
TP3L
VR3311
VR3301
TP CONNECTOR
VR3309
1
4

PCB－TIMER (COMPONENT SIDE)


TP8A
TP8X
VC8A0
TP8Y

## [Servo Circuit]
### 1. Playback Switching Point

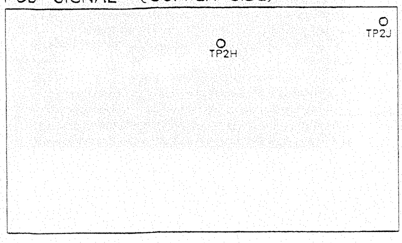
**Adjustment purpose:** Video switch over timing during playback.

**Symptom when incorrectly adjusted:** Switching noise or jitter on the playback picture.

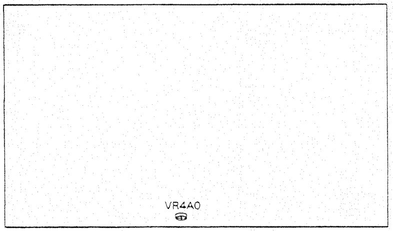
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | Alignment tape (PAL grey scale step signal) |
| EXT trigger | TP2H | VCR condition | Playback |
| Measurement range | DIV 20mV<br>TIM 50 μ sec | Using Jig. | --- |

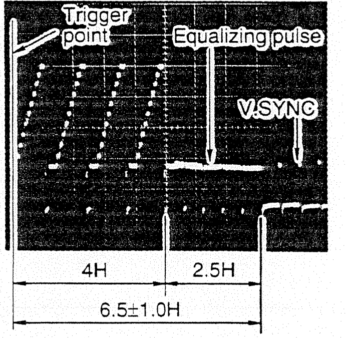
1. Short-circuit TP8X and TP8Y via the diode (MA165) (cathode side : TP8Y) on PCB TIMER. Confirm that the "DTR" displayed in Fluorescent Display flashed fast.
2. Observe TP2J.
3. Set the oscilloscope's Slope to (-).
4. Adjust VR4A0 on PCB CONTROL so that the trigger point is located at 6.5± 1.0H front of vertical synchronizing signal.

PCB-SIGNAL (COPPER SIDE)

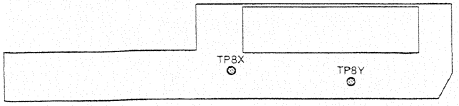


PCB-CONTROL (COMPONENT SIDE)





PCB-TIMER (COMPONENT SIDE)



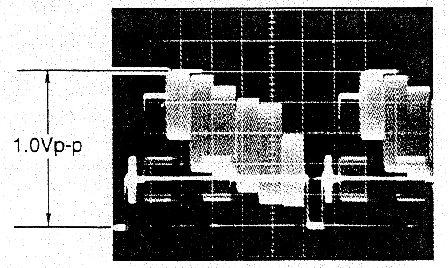
## [Y/C Signal Circuit]
### 2. EE Output Level

**Adjustment purpose:** Output level of SECAM video signal at Pause.

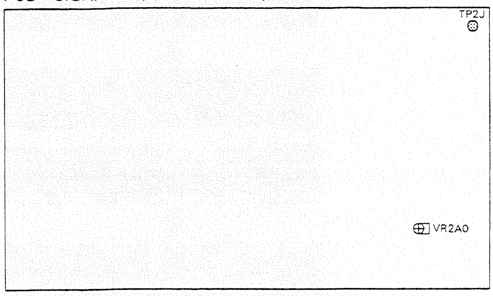
**Symptom when incorrectly adjusted:** Too bright or too dark picture: improper colour.

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | EXT signal (PAL colour bar) |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | --- |
| EXT trigger | --- | VCR condition | STOP |
| Measurement range | DIV 20mV<br>TIM 10 μ sec | Using Jig. | --- |

1. Observe TP2J.
2. Adjust VR2A0 so that the amplitude of waveform is 1.0Vp-p.



PCB-SIGNAL (COPPER SIDE)

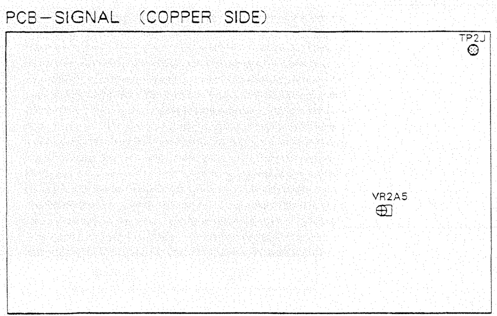


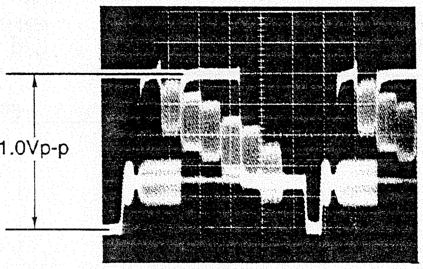
| | |
|---|---|
| 3. Playback Video Output Level | **Adjustment purpose:** Video output level during playback.<br>**Symptom when incorrectly adjusted:** Incorrect colour. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | Alignment tape (PAL colour bar) |
| EXT trigger | --- | VCR condition | Playback |
| Measurement range | DIV 20mV<br>TIM 10 μ sec | Using Jig. | --- |

Perform the EE Output Level adjustment before this adjustment.

1. Observe TP2J.
2. Adjust VR2A5 so that the amplitude of waveform is 1.0Vp-p.

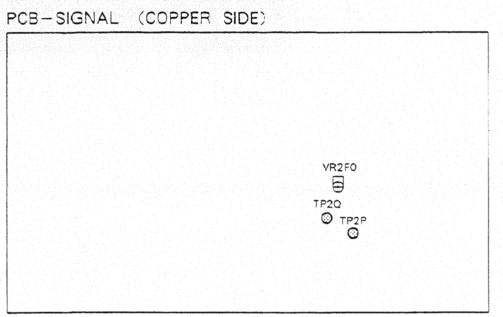


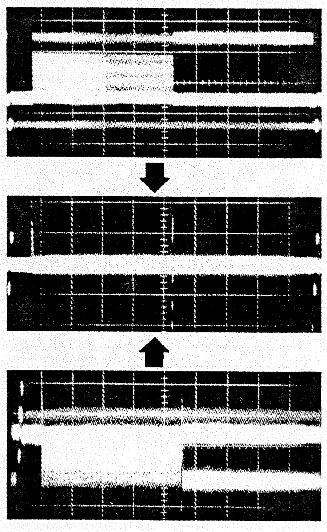


| | |
|---|---|
| 4. Noise Cancel | **Adjustment purpose:** S/N ratio and resolution of colour signal.<br>**Symptom when incorrectly adjusted:** Poor S/N ratio; poor colour signal resolution. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2P<br>CH-2:TP2Q | Using tape | Alignment tape (PAL colour bar) |
| EXT trigger | --- | VCR condition | Playback |
| Measurement range | DIV 20mV<br>TIM 2msec | Using Jig. | --- |

1. Set the oscilloscope's volt range of CH-1 and CH-2 for same range.
2. Set the oscilloscope to ADD mode and CH-2 to Invert mode.
3. Observe TP2P and TP2Q.
4. Adjust VR2F0 so that the amplitude of waveform is minimum.

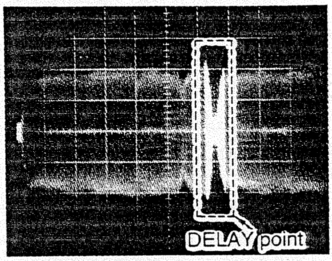


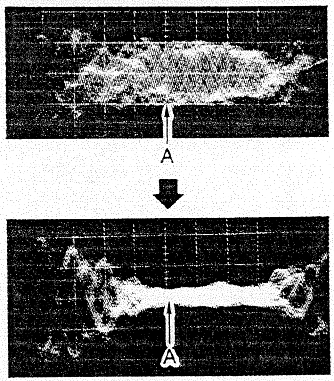


| | |
|---|---|
| 5.SECAM Playback Bell<br>(1.1MHz)<br>(HS-MS7 Only) | **Adjustment purpose:** Level compensation of playback signal so that it can be processed at Y/C circuit.<br>**Symptom when incorrectly adjusted:** Colour streaking and colour smear on the playback picture. |

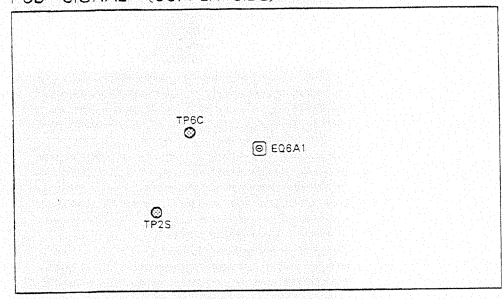
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP6C<br>CH-2--- | Using tape | Alignment tape (SECAM colour bar) |
| EXT trigger | TP2S | VCR condition | Playback |
| Measurement range | DIV 5mV<br>TIM 0.5$\mu$ sec (DELAY mode) | Using Jig. | --- |

1. Observe TP6C.
2. Adjust EQ6A1 so that the amplitude of the part A is minimum.





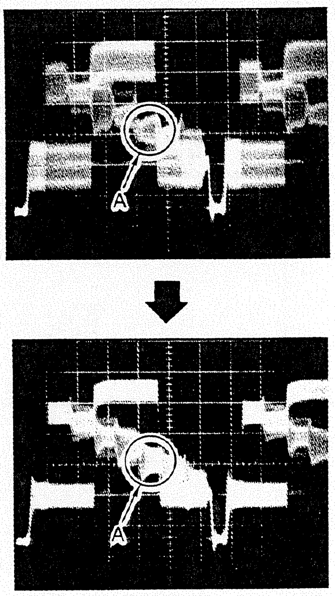
PCB – SIGNAL (COPPER SIDE)



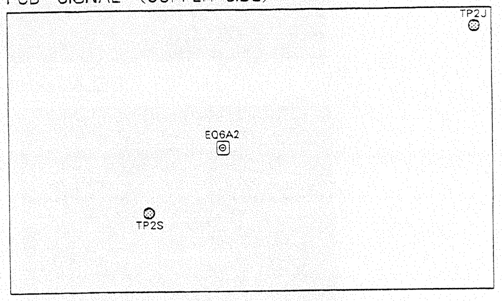
| | |
|---|---|
| 6.SECAM Playback Bell<br>(4.3MHz)<br>(HS-MS7 Only) | **Adjustment purpose:** Level compensation of playback signal processed at Y/C circuit so that it can be received by TV set.<br>**Symptom when incorrectly adjusted:** Colour smear and streaking. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | Alignment tape (SECAM colour bar) |
| EXT trigger | TP2S | VCR condition | Playback |
| Measurement range | DIV 20mV<br>TIM 10$\mu$ sec | Using Jig. | --- |

1. Observe TP2J.
2. Adjust EQ6A2 so that the waveform of the part A is single as shown in figure.



PCB – SIGNAL (COPPER SIDE)

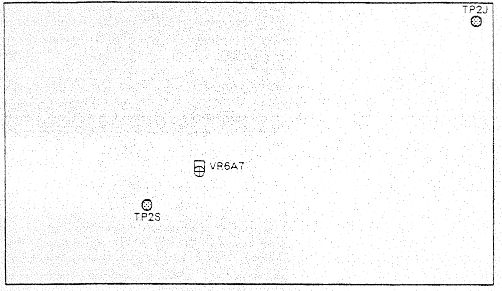


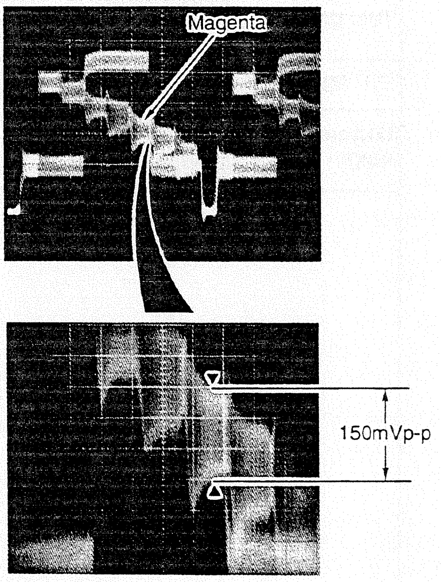
| | |
|---|---|
| 7.SECAM Playback Colour Level<br>(HS-MS7 Only) | **Adjustment purpose:** Colour leveling during playback.<br>**Symptom when incorrectly adjusted:** Dot ncise and degraded S/N ratio. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | Alignment tape (SECAM colour bar) |
| EXT trigger | TP2S | VCR condition | Playback |
| Measurement range | DIV 20mV<br>TIM 10 µ sec | Using Jig. | --- |

1. Observe TP2J.
2. Adjust VR6A7 so that the amplitude of magenta level is 150mVp-p.

PCB-SIGNAL (COPPER SIDE)





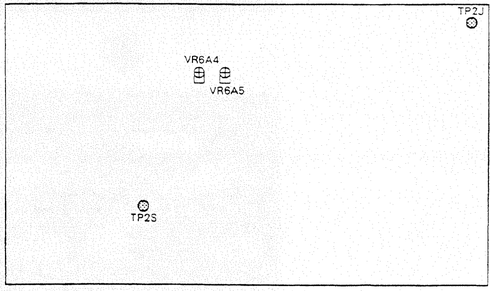
DIV 5mV
TIM 5µsec

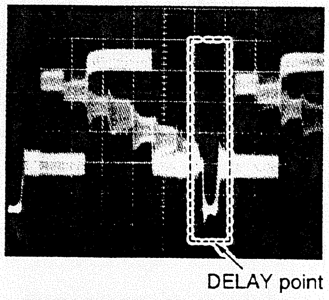
| | |
|---|---|
| 8.SECAM Blanking<br>(HS-MS7 Only) | **Adjustment purpose:** Positioning of Gate Signal which removes noise in no signal period for colour signal processing.<br>**Symptom when incorrectly adjusted:** Missing colour signal. |

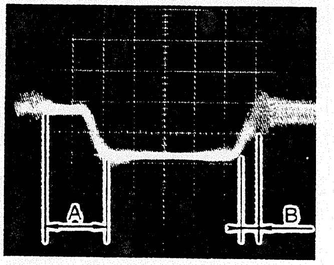
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | Alignment tape (SECAM colour bar) |
| EXT trigger | TP2S | VCR condition | Playback |
| Measurement range | DIV 20mV<br>TIM 1 µ sec<br>(DELAY mode) | Using Jig. | --- |

1. Observe TP2J.
2. Adjust VR6A5 so that the waveform of the part A is 2.0 µ sec as shown below.
3. Adjust VR6A4 so that the waveform of the part B is 0.5 µ sec as shown below.

PCB-SIGNAL (COPPER SIDE)







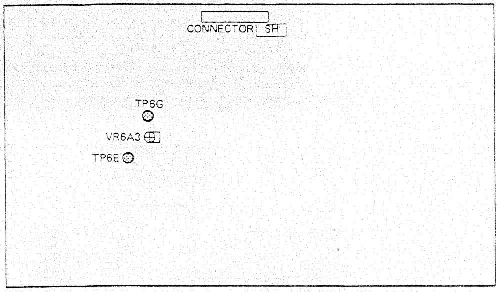
## 9.N-PAL VCO

**Adjustment purpose:** Frequency setting of gate pulse for sampling the burst signal in order to convert NTSC signal to a quasi-PAL signal.
**Symptom when incorrectly adjusted:** No colour signal during N-PAL playback.

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Frequency counter | | Input signal | ---- |
| Test point | TP6G | Using tape | Alignment tape (NTSC colour bar) |
| EXT trigger | --- | VCR condition | Playback |
| Measurement range | --- | Using Jig. | ---- |

1. Set COLOUR SYSTEM switch (Right side) to "MANUAL" position.
2. Set COLOUR SYSTEM switch (Left side) to "PAL-TV" position.
3. Short-circuit TP6E and connector $\boxed{\text{SH}}$ pin ⑤ (SW 5V).
4. Observe TP6G.
5. Adjust VR6A3 so that the frequency is 15.73 ± 0.05kHz.
6. Open-circuit TP6E and connector $\boxed{\text{SH}}$ pin ⑤ (SW 5V).

PCB-SIGNAL (COPPER SIDE)

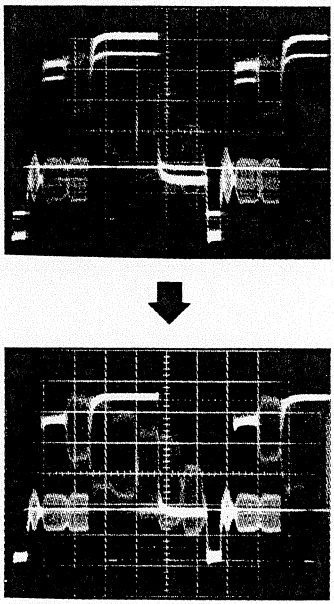


## 10.Skew Correction

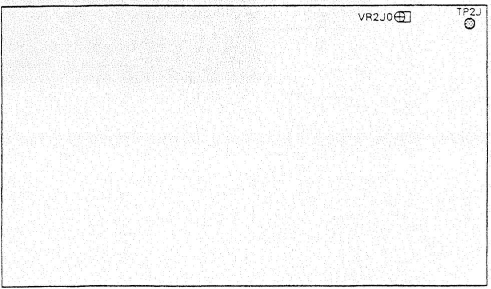
**Adjustment purpose:** Corrects the disturbance of vertical synchronization during the Still mode.
**Symptom when incorrectly adjusted:** The disturbance of vertical synchronization appears on screen at the Still mode.

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | Alignment tape (NTSC colour bar) |
| EXT trigger | --- | VCR condition | STILL |
| Measurement range | DIV 20mV<br>TIM 10 μ sec | Using Jig. | --- |

1. Observe TP2J.
2. Adjust VR2J0 so that the waveform is single as shown in figure.



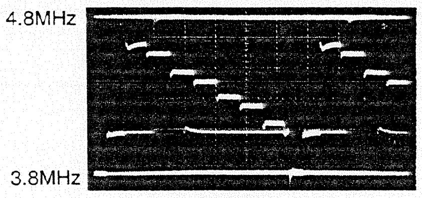
PCB-SIGNAL (COPPER SIDE)

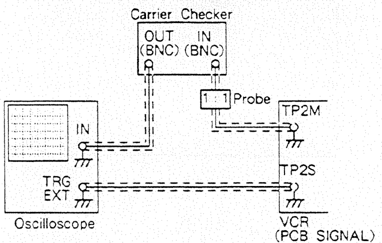


| | |
|---|---|
| 11. Carrier set, Deviation | **Adjustment purpose:** FM carrier frequency and frequency deviations.<br>**Symptom when incorrectly adjusted:** Too bright or too dark picture. Horizontal noise or out of sync. |

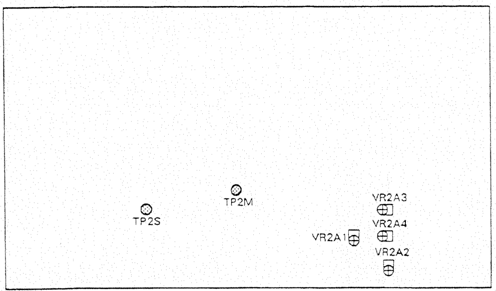
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 1:1) | | Input signal | EXT signal (PAL colour bar) |
| Test point | CH-1:TP2M<br>CH-2:--- | Using tape | --- |
| EXT trigger | TP2S | VCR condition | STOP |
| Measurement range | DIV 0.2V<br>TIM 10 μ sec | Using Jig. | Carrier checker |

1. Turn VR2A4 and VR2A3 fully counter clockwise as seen from the copper side.
2. Observe TP2M via the carrier checker.
3. Adjust VR2A2 and VR2A1 so that the response waveform 3.8MHz line and 4.8MHz just touch each of white lines on the oscilloscope.
4. Perform the white clip and dark clip adjustment (ITEM 12).





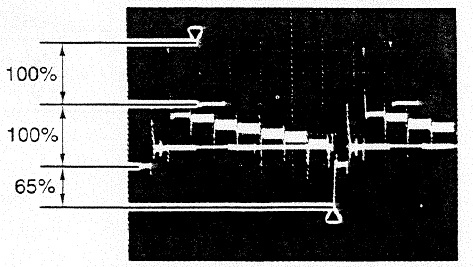
PCB－SIGNAL (COPPER SIDE)



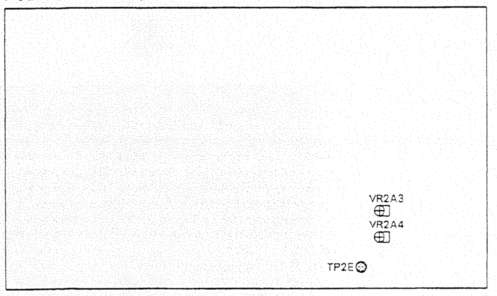
| | |
|---|---|
| 12. White Clip and Dark Clip | **Adjustment purpose:** Sharpening of aperture in picture.<br>**Symptom when incorrectly adjusted:** Blur image, white streaking, black streaking. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | EXT signal (PAL colour bar) |
| Test point | CH-1:TP2E<br>CH-2:--- | Using tape | --- |
| EXT trigger | TP2S | VCR condition | STOP |
| Measurement range | DIV 20mV (VARIABLE mode)<br>TIM 10 μ sec | Using Jig. | --- |

1. Observe TP2E.
2. Adjust VR2A3 and VR2A4 so that the overshoot appearing at the white peak side and the undershoot below sync tip are 100% and 65% respectively.



PCB－SIGNAL (COPPER SIDE)

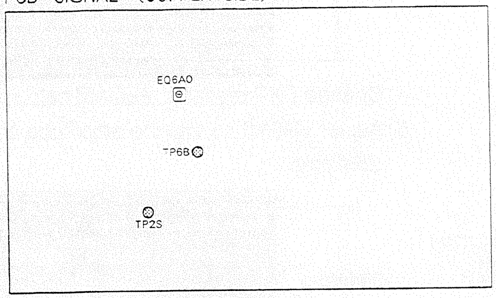


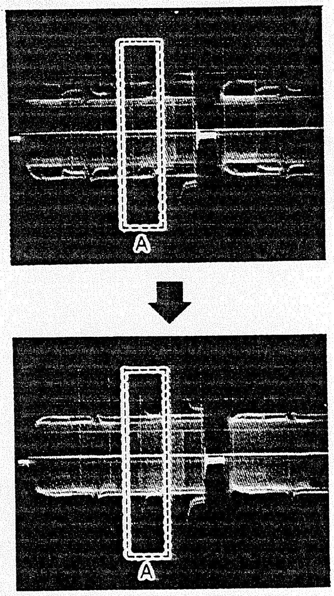
| | |
|---|---|
| 13.SECAM Recording Bell (1.1MHz) (HS-MS7 Only) | **Adjustment purpose:** Level compensation of Y/C output signal so that it can be recorded on tape.<br>**Symptom when incorrectly adjusted:** Colour smear and colour streaking on the playback. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | EXT signal (SECAM colour bar) |
| Test point | CH-1:TP6B<br>CH-2:--- | Using tape | A tape |
| EXT trigger | TP2S | VCR condition | SP REC |
| Measurement range | DIV 10mV<br>TIM 10 μ sec | Using Jig. | --- |

1. Observe TP6B
2. Adjust EQ6A0 so that the waveform of the part A is single as shown in figure.

PCB-SIGNAL (COPPER SIDE)



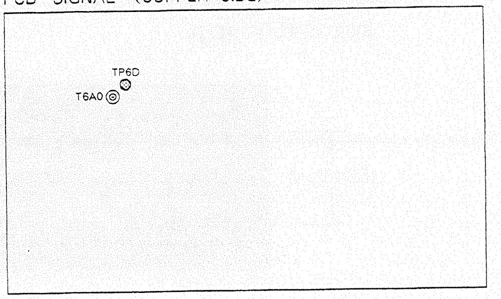


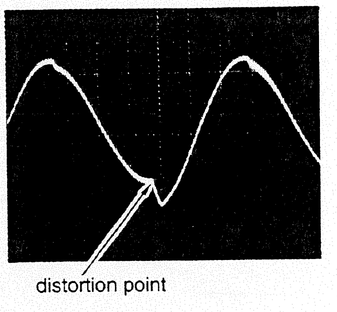
| | |
|---|---|
| 14.1/2fH Resonance Frequency (HS-MS7 Only) | **Adjustment purpose:** Maximize sensitivity of SECAM discrimination circuit.<br>**Symptom when incorrectly adjusted:** Loss of colour signal because SECAM signal cannot be detected. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | EXT signal (SECAM colour bar) |
| Test point | CH-1:TP6D<br>CH-2:--- | Using tape | A tape |
| EXT trigger | --- | VCR condition | SP REC |
| Measurement range | DIV 0.1V<br>TIM 20 μ sec | Using Jig. | --- |

1. Observe TP6D.
2. Adjust T6A0 so that the distortion point is at the lowest point.

PCB-SIGNAL (COPPER SIDE)





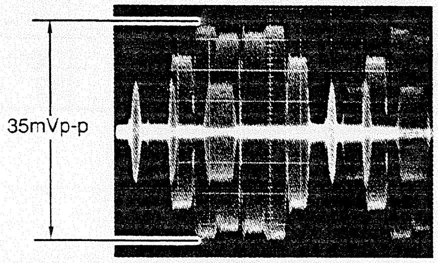
## 15.Y/C Recording Level (HS-MS7 Only)

**Adjustment purpose:** Level setting of video signal for recording.

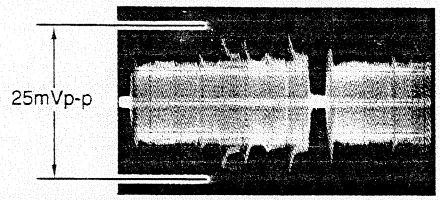
**Symptom when incorrectly adjusted:** Low luminance S/N, beats, colour banding of chrominance signal or flicker.

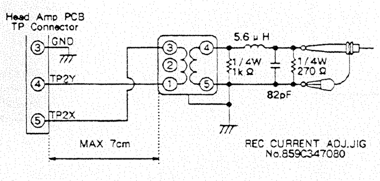
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 1:1) | | Input signal | EXT signal (PAL colour bar) |
| Test point | TP connector pin ⑤ and pin ④ | Using tape | A tape |
| EXT trigger | TP2S | VCR condition | LP REC |
| Measurement range | DIV 5mV<br>TIM 10 μ sec | Using Jig. | REC CURRENT ADJ. JIG |

1. Observes TP connector pin ⑤ and pin ④ via the REC CURRENT ADJ. JIG.
2. Turn VR203 fully counter clockwise as seen from top side.
3. Adjust VR6A0 so that the amplitude of cyan is 35mVp-p.

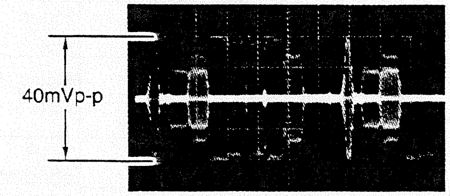


4. Change EXT signal to SECAM colour bar.
5. Adjust VR6A6 so that the amplitude of cyan is 25mVp-p.

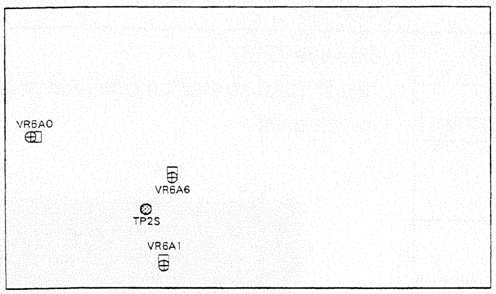



Head Amp PCB
TP Connector
③
GND
④
TP2Y
⑤
TP2X
MAX 7cm
③
②
①
④
⑤
5.6 μ H
1/4W
1k Ω
1/4W
270 Ω
82pF
REC CURRENT ADJ.JIG
No.859C347080

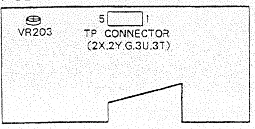
6. Change EXT signal to NTSC colour bar.
7. Set the oscilloscope's volt range to 10mV/div.
8. Adjust VR6A1 so that the amplitude of burst is 40mVp-p.



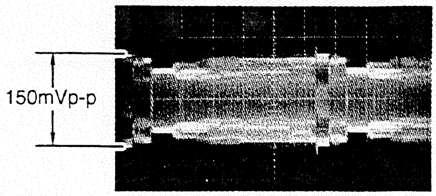
PCB－SIGNAL (COPPER SIDE)


VR6A0
VR6A6
TP2S
VR6A1

PCB－HEAD－AMP (COMPONENT SIDE)


VR203
5
1
TP CONNECTOR
(2X.2Y.G.3U.3T)

9. Change EXT signal to PAL colour bar.
10. Set the oscilloscope's probe to 10:1.
11. Set the oscilloscope's volt range to 5mV/div.
12. Adjust VR203 so that the amplitude of horizontal sync is 150mVp-p.



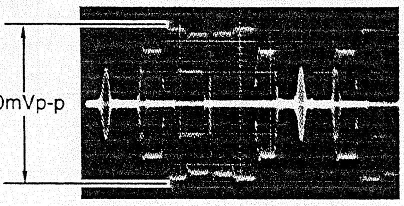
## 16.Y/C Recording Level (HS-MS5 Only)

**Adjustment purpose:** Level setting of video signal for recording.

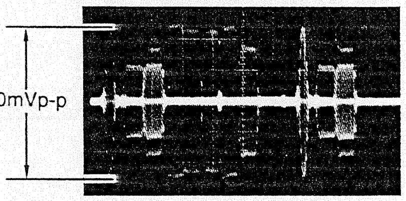
**Symptom when incorrectly adjusted:** Low luminance S/N, beats, colour banding of chrominance signal or flicker.

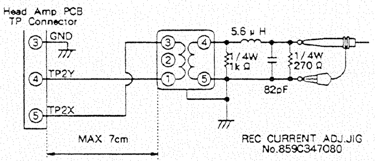
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 1:1) | | Input signal | EXT signal (PAL colour bar) |
| Test point | TP connector pin ⑤ and pin ④ | Using tape | A tape |
| EXT trigger | TP2S | VCR condition | LP REC |
| Measurement range | DIV 10mV<br>TIM 10 µ sec | Using Jig. | REC CURRENT ADJ. JIG |

1. Observes TP connector pin ⑤ and pin ④ via the REC CURRENT ADJ. JIG.
2. Turn VR203 fully counter clockwise as seen from top side.
3. Adjust VR6A0 so that the amplitude of cyan is 50mVp-p.

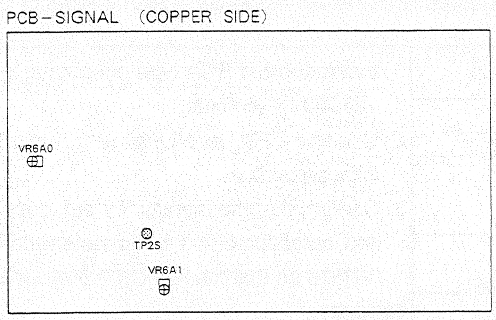


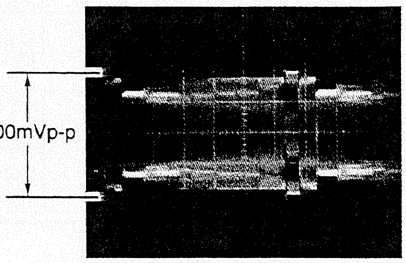
4. Change EXT signal to NTSC colour bar.
5. Adjust VR6A1 so that the amplitude of burst is 50mVp-p.

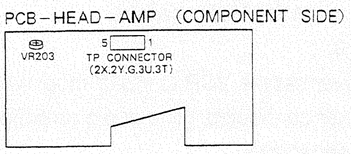



Head Amp PCB
TP Connector
③ GND
④ TP2Y
⑤ TP2X
③
②
①
④
⑤
5.6 µ H
1/4W
1k Ω
1/4W
270 Ω
82pF
MAX 7cm
REC CURRENT ADJ.JIG
No.859C347080

6. Change EXT signal to PAL colour bar.
7. Set the oscilloscope's probe to 10:1.
8. Set the oscilloscope's volt range to 5mV/div.
9. Adjust VR203 so that the amplitude of horizontal sync is 200mVp-p.


PCB-SIGNAL (COPPER SIDE)
VR6A0
TP2S
VR6A1



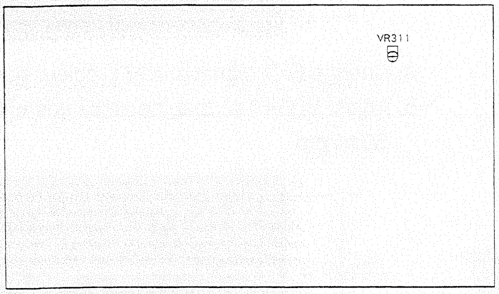

PCB-HEAD-AMP (COMPONENT SIDE)
VR203
5
1
TP CONNECTOR
(2X.2Y.G.3U.3T)

| | |
|---|---|
| **[ Audio Circuit ]**<br>17.Playback Audio Level<br>(HS-MS5 Only) | **Adjustment purpose:** Audio level setting for playback.<br>**Symptom when incorrectly adjusted:** Too loud or too low audio level during playback. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Audio Tester | | Input signal | EXT signal (PAL colour bar) |
| Test point | AUDIO OUT terminal | Using tape | Alignment tape (PAL 1kHz audio signal) |
| EXT trigger | --- | VCR condition | Playback |
| Measurement range | --- | Using Jig. | --- |

1. Observe AUDIO OUT terminal.
2. Adjust VR311 so that the audio output level is -6dBs(388mVr.m.s.). (0dBs=1mW 600Ω :0.775Vr.m.s.)
3. Check that the level fluctuation is less than ±1dBs. If level fluctuation is over ±1dBs then check that the mechanical adjustment of A/C HEAD slant adjustment.

PCB-SIGNAL (COPPER SIDE)



| | |
|---|---|
| 18.Audio Bias Level | **Adjustment purpose:** Audio bias level setting for recording.<br>**Symptom when incorrectly adjusted:** Poor Audio response in high frequency area. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Audio tester | | Input signal | EXT signal (PAL colour bar) |
| Test point | TP3E<br>TP3F | Using tape | A tape |
| EXT trigger | --- | VCR condition | SP REC<br>High pass filter |
| Measurement range | --- | Using Jig. | |

1. Insert shorted RCA type phonoplug into the AUDIO IN terminal.
2. Observe TP3E and TP3F with Audio Tester via high pass filter.
3. Confirm that the monitor TV etc. dose not affect the indication of the audio tester and then adjust VR310 so that the level of 2.6mVr.m.s.

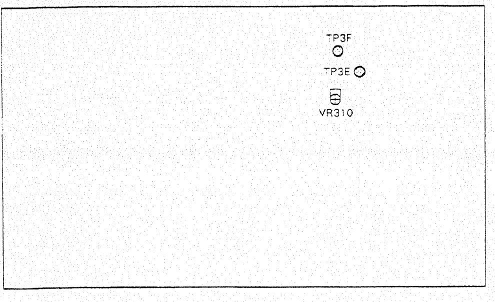
**Note 1:**

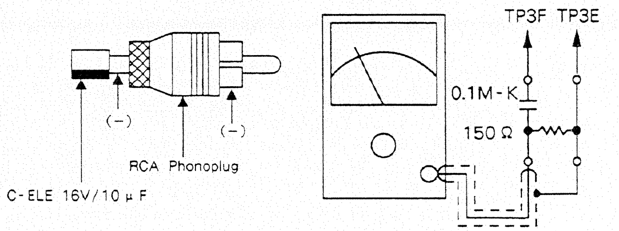
Be sure that the audio tester housing never touches the VCR chassis.

**Note 2:**

Never set the VCR to PLAY mode with the audio tester connected. (The audio amplifier will be overloaded.)

PCB-SIGNAL (COPPER SIDE)



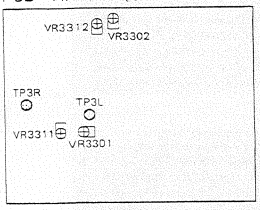


| | |
|---|---|
| **[ Hi-Fi Audio Circuit ]**<br>(HS-MS7 Only)<br>19.VCO | **Adjustment purpose:** Setting of FM carrier frequency for Hi-Fi audio.<br>**Symptom when incorrectly adjusted:** Buzz. |

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Frequency counter | | Input signal | --- |
| Test point | TP3L<br>TP3R | Using tape | A tape |
| EXT trigger | --- | VCR condition | SP REC |
| Measurement range | --- | Using Jig. | --- |

1. Set CH button to "EXT" position.
2. Set MONITOR button to "STEREO" mode.
3. Connect AUDIO IN terminal to GND (L-CH and R-CH).
4. Set COLOUR SYSTEM switch (Right side) to "MANUAL" position.
5. Set COLOUR SYSTEM switch (Left side) to "NOR" position.
6. Set SYSTEM SELECT button to "NTSC" mode.
7. Observe TP3L.
8. Adjust VR3301 so that the frequency is 1.3MHz.
9. Observe TP3R.
10. Adjust VR3302 so that the frequency is 1.7MHz.
11. Set SYSTEM SELECT button to "PAL" mode.
12. Observe TP3L.
13. Adjust VR3311 so that the frequency is 1.4MHz.
14. Observe TP3R.
15. Adjust VR3312 so that the frequency is 1.8MHz.

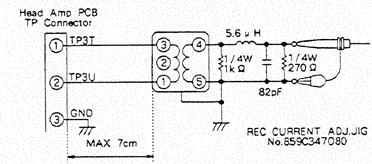
PCB – Hi – Fi (COMPONENT SIDE)



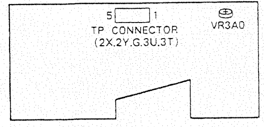
| | |
|---|---|
| 20.FM REC Level | **Adjustment purpose:** Setting of record level of Hi-Fi audio signal.<br>**Symptom when incorrectly adjusted:** Wow/flutter in audio. Poor S/N in video signal. |

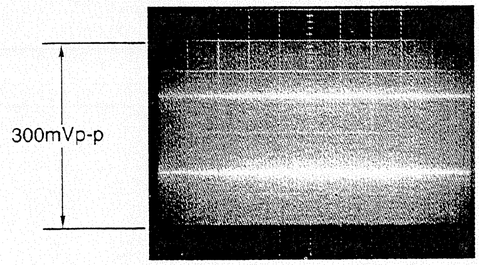
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | TP connector pin ① and pin ② | Using tape | A tape |
| EXT trigger | --- | VCR condition | SP REC |
| Measurement range | DIV 5mV<br>TIM 10 μ sec | Using Jig. | REC CURRENT ADJ. JIG |

1. Set CH button to "EXT" position.
2. Set MONITOR switch to "STEREO" mode.
3. Connect AUDIO IN terminal to GND (L-CH and R-CH).
4. Set COLOUR SYSTEM switch (Right side) to "MANUAL" position.
5. Set COLOUR SYSTEM switch (Left side) to "NOR" position.
6. Set SYSTEM SELECT button to "PAL" mode.
7. Observe TP connector pin ① and pin ② via the REC CURRENT ADJ. JIG.
8. Adjust VR3A0 so that the amplitude of waveform is 300mVp-p.



PCB – HEAD – AMP (COMPONENT SIDE)





## 21.DOP Level

**Adjustment purpose:** Setting of detection level of recorded Hi-Fi audio signal in the video tape.

**Symptom when incorrectly adjusted:** Cannot detect Hi-Fi audio signal or cannot change to Normal audio.

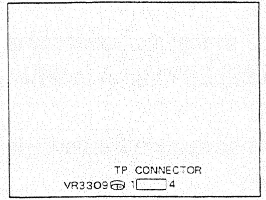
| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | --- |
| Test point | CH-1:TP connector pin ③<br>CH-2:--- | Using tape | A tape |
| EXT trigger | --- | VCR condition | SP REC |
| Measurement range | DIV 5mV<br>TIM 10 μ sec | Using Jig. | --- |

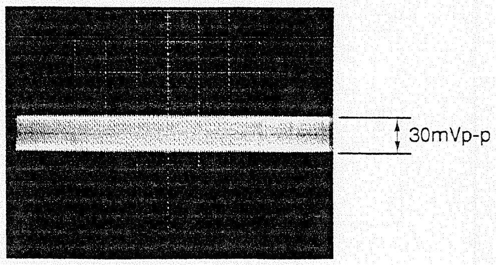
1. Set CH button to "EXT" position.
2. Observe TP connector pin ③.
3. Connect oscilloscope's GND to TP connector pin ②.
4. Adjust VR3309 so that the amplitude of waveform is minimum.

**Note:**

The amplitude of waveform must be below 30mVp-p.

PCB-Hi-Fi (COMPONENT SIDE)





## [Timer Circuit]

## 22.Clock OSC Frequency

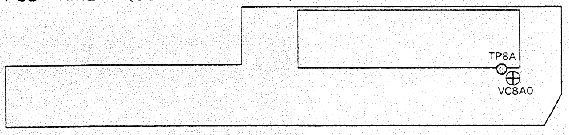
**Adjustment purpose:** Accuracy of clock.

**Symptom when incorrectly adjusted:** Poor clock accuracy.

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Frequency counter | | Input signal | --- |
| Test point | TP8A | Using tape | --- |
| EXT trigger | --- | VCR condition | Stand by |
| Measurement range | PERIOD mode | Using Jig. | --- |

1. Observe TP8A.
2. Adjust VC8A0 so that the period is 7.324219± 0.000030msec (136.533332±0.000540Hz).

PCB-TIMER (COMPONENT SIDE)



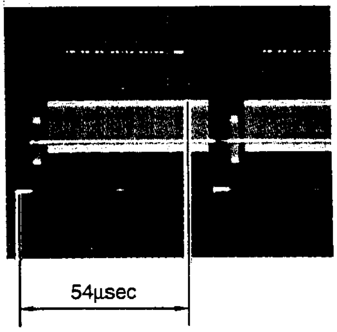
## 23.Display Position

**Adjustment purpose:** Positioning of display characters.

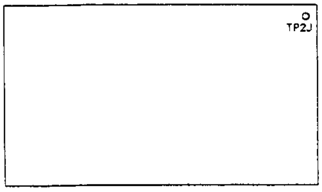
**Symptom when incorrectly adjusted:** Incorrect position.

| Measuring instrument and condition | | VCR set up condition | |
|---|---|---|---|
| Oscilloscope (Probe 10:1) | | Input signal | EXT signal (PAL colour bar) |
| Test point | CH-1:TP2J<br>CH-2:--- | Using tape | --- |
| EXT trigger | --- | VCR condition | STOP |
| Measurement range | DIV 20mV<br>TIM 10 µ sec | Using Jig. | --- |

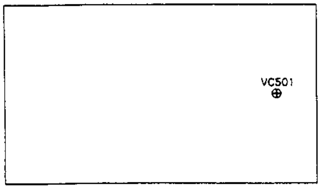
1. Push PROG REC button on the remote hand unit. Display the Programme Timer screen.
2. Observe TP2J.
3. Adjust VC501 so that the time difference between the falling edge of H-SYNC and end of character signal is 54 µ sec.



PCB-SIGNAL (COPPER SIDE)



PCB-CONTROL (COMPONENT SIDE)



# MECHANICAL ADJUSTMENT AND REPLACEMENT (F DECK)

## 1. Cleaning of Deck

The following parts require cleaning whenever serviced to maintain satisfactory performance.

### 1-1 Video Head

A. Clean the video heads in the following method if dust and other foreign objects on the video heads disturb the normal playback of images :
Dampen video head cleaning cloth with alcohol. Hold the cloth against the drum and turn the drum slowly counterclockwise to clean.
**Note** :
Do not directly touch the head attached to the upper drum. The head is very hard but brittle to impact, especially in the vertical direction.
Do not apply force in the vertical direction.

B. Allow residual alcohol to dry thoroughly before running tape . Otherwise, the liquid may stick to and damage the tape.

### 1-2 Tape Transport (Refer to Fig. 1-1.)

Clean the following parts of the tape transport.

1. Tension regulation arm S
2. Tension arm
3. Supply guide pole
4. FE head
5. Impedance roller
6. Supply guide roller
7. Supply slant pole
8. Upper and lower drum
9. Takeup slant pole
10. Takeup guide roller
11. A/C head
12. Takeup guide pole
13. Pinch roller
14. Capstan shaft
15. Takeup guide arm
16. Tension regulation arm T

A. Clean the tape transport with gauze dampened with alcohol, except the supply and takeup guide rollers.
If Guide rollers are stained with dust, clean them with dry gauze or exchange them for new parts.

B. Allow residual alcohol to dry thoroughly before running a tape. Otherwise the liquid may stick to and damage the tape.

### 1-3 Reel Disk Drive System

A. Clean the reel disk braking surfaces and the reel belt.

B. Clean the above parts with gauze dampened with alcohol.

C. Allow the residual liquid to dry thoroughly before operating the reel disk.

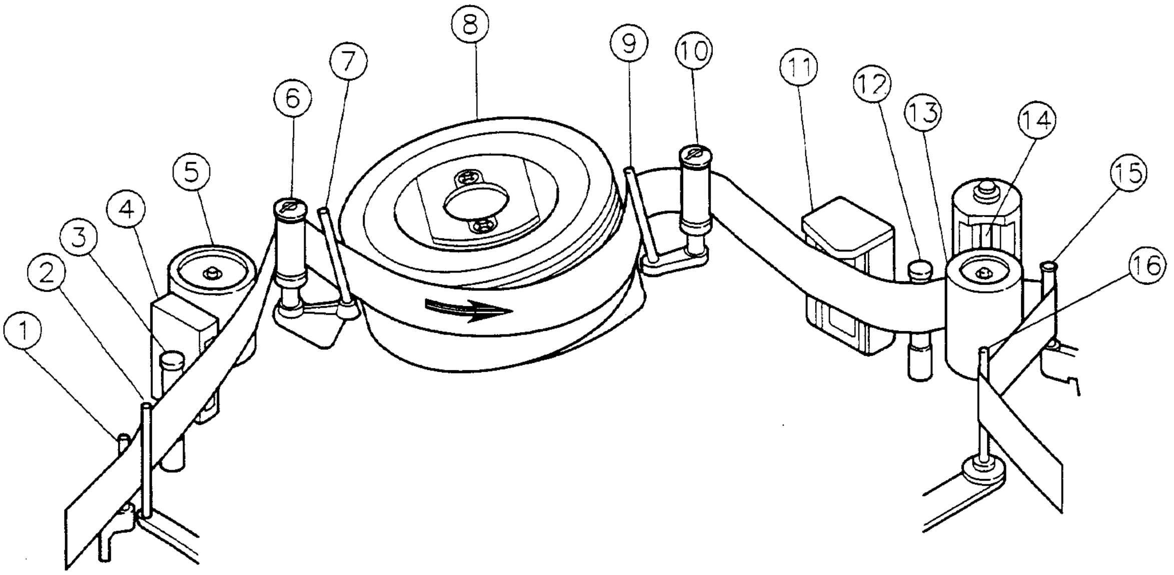


Fig.1 − 1

F0D001

## 2. Replacement of Major Parts

### 2-1 Cassette Housing

### 2-1-1 Removal (Refer to Fig. 2-1-1~2-1-2.)

A. Set the VCR to the eject mode.

B. Remove the top panel, bottom panel, and front panel.

C. Unfasten the snap of the cable holder and remove the cable holder from the cassette housing as shown in Fig.2-1-1.

D. Unscrew four cassette housing fastening screws (ⓐ,ⓑ,ⓒ, and ⓓ). Raise the cassette housing slowly in the direction shown by the arrow.

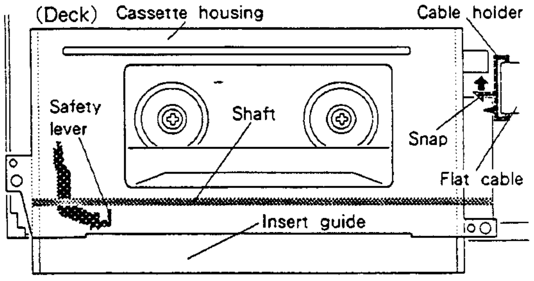

(Deck)
Cassette housing
Cable holder
Safety lever
Shaft
Snap
Flat cable
Insert guide

Fig. 2－1－1

### 2-1-2 Installation (Refer to Fig.2-1-1~2-1-3.)

A. Slowly lower the cassette housing onto the main plate of the deck so that the safety lever enters between the insert guide and the shaft as shown in Fig.2-1-1.
Align the two positioning holes (ⓔ and ⓕ) and the two U holes (ⓖ and ⓗ) located on the cassette housing with the matching holes in the deck.

B. In step A above, if the front loading gear of the cassette housing does NOT engage the boss on the main plate, carefully push the gear toward the front of the VCR using a small-diameter screwdriver, as illustrated in Fig.2-1-3. If the gear still will not engage, rotate the Front Loading Gear a few degrees from the below the deck until the gear engages the boss correctly.

C. Fasten the housing to the deck with the four screws (ⓐ,ⓑ,ⓒ and ⓓ).

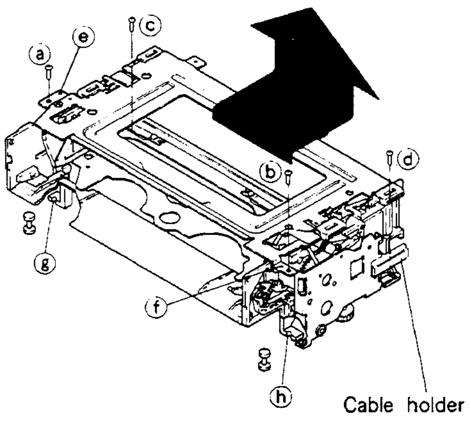

ⓐ
ⓔ
ⓒ
ⓑ
ⓓ
ⓖ
ⓕ
ⓗ
Cable holder

Fig. 2－1－2 F0D002

### 2-2 Lock arm and Drive gear

### 2-2-1 Removal (Refer to Fig. 2-1-3~2-2.)

A. Unfasten four snaps (ⓐ,ⓑ,ⓒ and ⓓ) as shown in Fig.2-1-3, and remove the side plate TU.

B. Turn the FL SW lever clockwise to separate the FL SW lever from the drive gear, and pull the lock arm and drive gear to remove them from the shaft as shown in Fig.2-2.

### 2-2-2 Installation (Refer to Fig.2-1-3~2-2.)

A. Install the drive gear on the shaft as shown in Fig.2-2.

B. Line the matching mark on the drive gear and beginning of gear section on the lock arm as shown in Fig.2-2, and install the lock arm.

C. Install the side plate TU to the cassette housing, and secure it with four snaps (ⓐ,ⓑ, ⓒ and ⓓ) as shown in Fig.2-1-3,

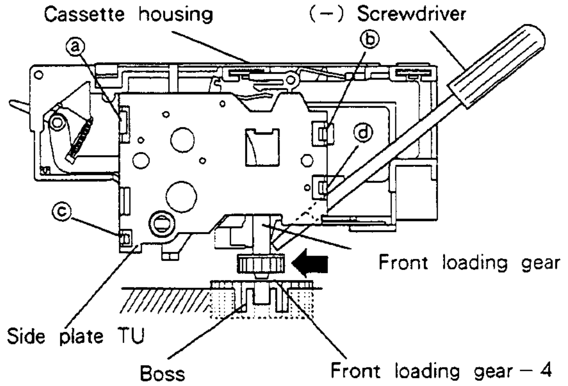

Cassette housing
(－) Screwdriver
ⓐ
ⓑ
ⓓ
ⓒ
Front loading gear
Side plate TU
Boss
Front loading gear－4

Fig. 2－1－3 F0D003

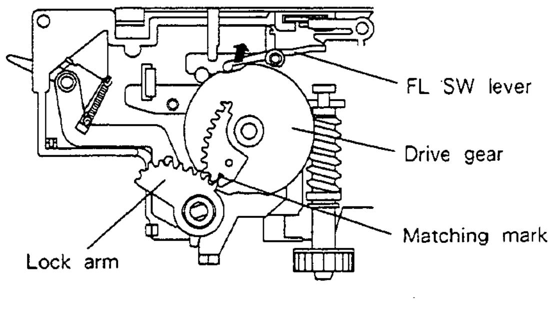

FL SW lever
Drive gear
Matching mark
Lock arm

Fig. 2－2

## 2-3 Drum Assembly

### 2-3-1 Removal (Refer to Fig. 2-3-1~2-3-3.)

A. Unscrew the brush fastening screw and remove the brush.

B. Unscrew two fastening screws (ⓐ and ⓑ) and remove the head amplifier PCB which is connected to the drum assembly.

**Note** :

The cable and connector between the drum and head amplifier may be damaged if the cable is pulled strongly, as the cable is short. Remove the shield cap of the PCB, raise the PCB slightly and disconnect the flat cable. ( Removal method for the flat cable connector and stopper is shown in Fig.2-3-3.)

Disconnect the grounding wire and remove the head amplifier PCB.

C. Unscrew three drum fastening screws (ⓒ,ⓓ and ⓔ) from the reverse side of the deck.

D. Remove the drum assembly by raising it with care not to touch other parts around the drum assembly.

E. Disconnect the connectors from the drum assembly.

### 2-3-2 Installation (Refer to Fig. 2-3-1,2-3-2.)

A. Connect the connectors to a new drum assembly.

B. Place the new drum assembly on the main plate of the deck slowly with care not to touch other parts.

C. Fasten the drum assembly with three fastening screws (ⓒ, ⓓ and ⓔ) on the reverse side of the deck.

D. Connect the head amplifier PCB to the drum assembly and fasten the PCB with two screws (ⓐ and ⓑ).

**Note** :

Conduct the mechanism interchangeability adjustment outlined in Para. 3 to give optimum performance when the drum assembly is replaced.

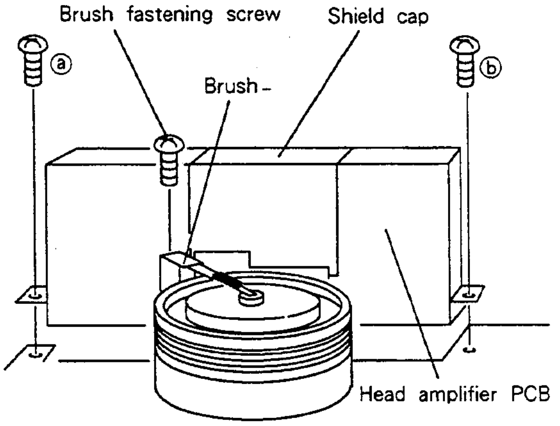


Fig. 2-3-1 F0D007

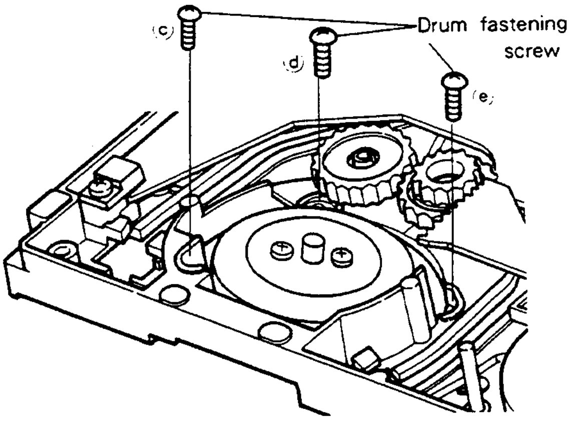


Fig. 2-3-2 F0D008

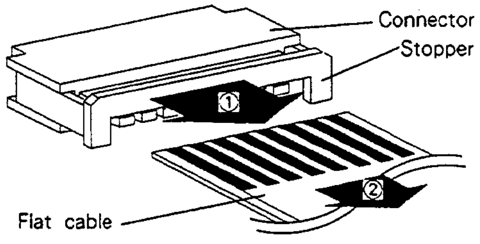


Fig. 2-3-3 F0D009

## 2-4 Upper Drum

### 2-4-1 Removal (Refer to Fig. 2-4-1.)

A. Unscrew the brush fastening screw and remove the brush.
B. Unsolder two inside soldered terminals of each head on the upper drum.
C. Unscrew the upper drum fastening screws.
D. Remove the upper drum slowly and carefully.

**Note** :
If the upper drum is difficult to remove, heat the upper drum fastening screw holes with a soldering iron, and the drum will be easily removed.

### 2-4-2 Installation (Refer to Fig. 2-4-1.)

**Note** :
Handle the upper drum carefully as the video heads are fragile.

A. Position the lower drum so that the hole in the shaft faces the operator. Align the upper drum with the lower drum so that the CH1 mark on the upper drum is on the right side, and couple the drums.
B. Fasten the upper drum with two screws. (Tighten the screws alternately.)
C. Solder the terminals not soldered on the upper drum.
D. Clean the video heads as outlined in Para. 1-1.

## 2-5 Reel Belt (Refer to Fig. 2-5)

A. Remove the reel belt from the capstan motor and the belt pulley.
B. Install a new reel belt.

**Note** :
Make certain that the new belt is free from grease, before installing.

## 2-6 Capstan Motor

### 2-6-1 Removal (Refer to Fig. 2-5, 2-6)

A. Disconnect the flat cable.
B. Remove the reel belt.
C. Remove three fastening screws shown in Fig. 2-6 and remove the capstan motor.

**CAUTION** :
Restrain the capstan motor as the three screws are removed, since an un-restrained motor may damage other parts of the deck.
When performing removal or installation of the capstan motor,take care that the outside of the rotor's rim is not greased.(Refer to Fig.2-5.)
If greasy components are attached on the outside of the rotor's rim, wipe them off with a dry cloth because they may cause defects during special effects playback.

### 2-6-2 Installation (Refer to Fig. 2-5, 2-6.)

A. Fasten the motor with three fastening screws.(Refer to Fig. 2-6.)
B. Install the reel belt.
C. Connect the flat cable.

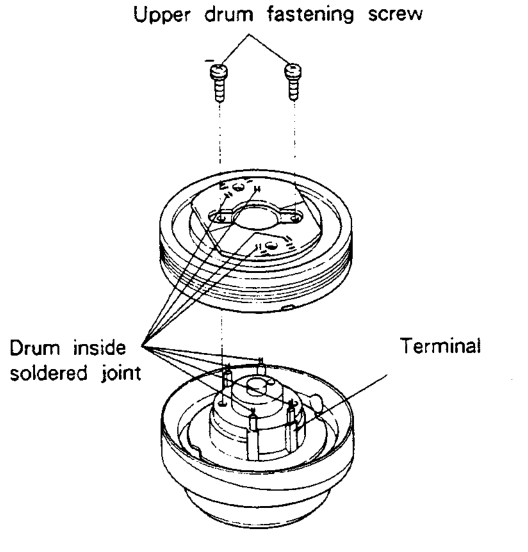


Fig. 2-4-1 F0D010

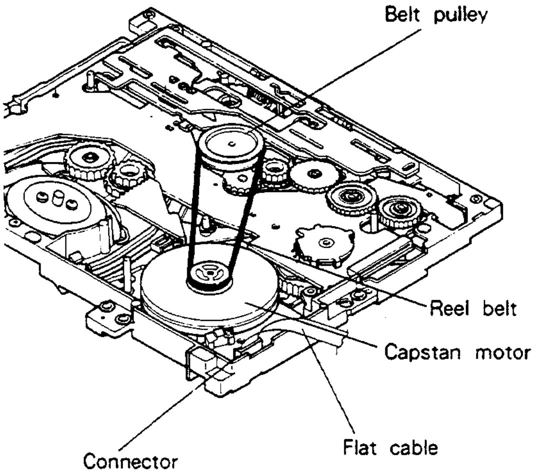


Fig. 2-5 F0D011

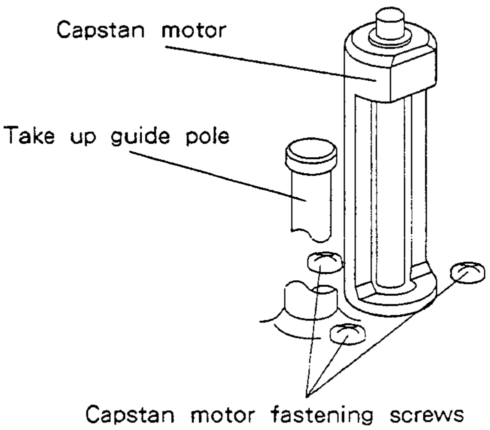


Fig. 2-6 F0D012

## 2-7 Loading Motor

### 2-7-1 Removal (Refer to Fig. 2-7-1, 2-7-2.)

A. Set the VCR to the eject mode.
B. Disconnect the wires from the loading motor.
C. Remove two stoppers securing the motor and the motor holder plate. (Refer to Fig. 2-7-2.)
D. Slide the motor and motor holder plate away, and then raise them to remove.
E. Remove the belt − LM from the loading motor and the pulley − L. (TYPE − B only)
F. Unscrew two screws and detach the motor holder plate from the motor.
G. Disconnect the coupling from the motor.

### 2-7-2 Installation (Refer to Fig. 2-7-1~2-7-3.)

A. Fasten the coupling to a new loading motor. (Refer to Fig. 2-7-3.)
B. Fasten the motor holder plate to the motor with two screws.
C. Install the belt − LM. (TYPE − B only)
D. Place the motor and motor holder plate in the motor holder to the rear of the deck.
E. Turn the motor shaft so that the coupling on the loading motors shall match the worm gear of the motor holder. Slide the loading motor forward and secure it with the stoppers.
F. Solder the leads to the loading motor. (Brown lead wire to the positive terminal and red lead wire to the negative terminal.)

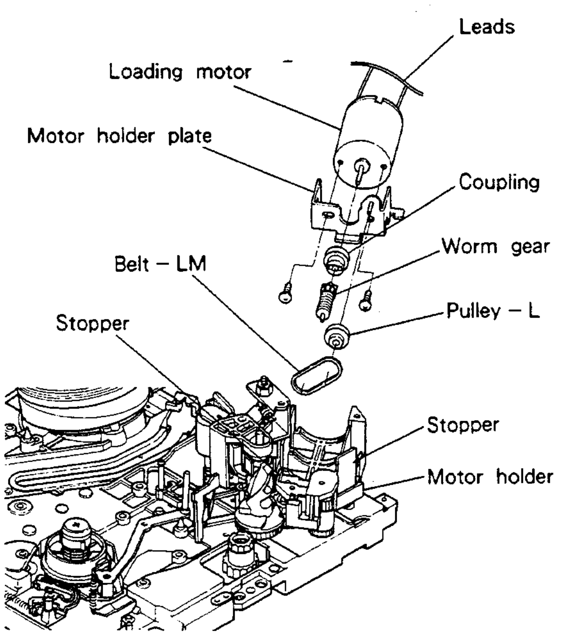

Leads
Loading motor
Motor holder plate
Coupling
Worm gear
Belt − LM
Pulley − L
Stopper
Stopper
Motor holder

Fig. 2 − 7 − 1 F0D013

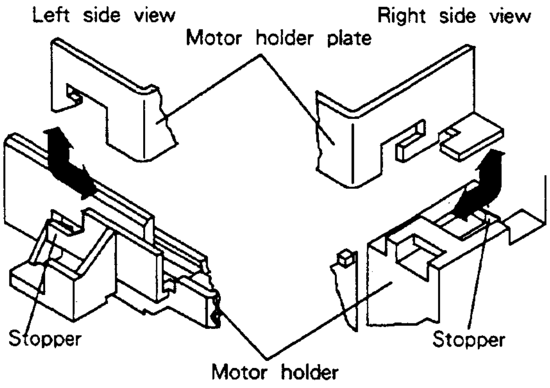

Left side view
Right side view
Motor holder plate
Stopper
Stopper
Motor holder

Fig. 2 − 7 − 2 F0D014

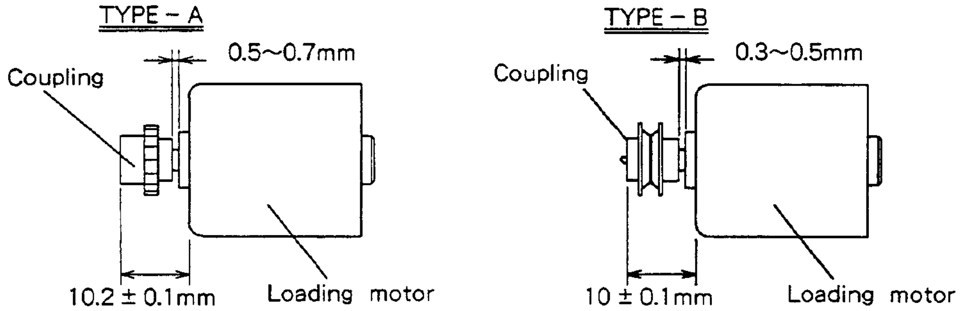

TYPE − A
0.5~0.7mm
Coupling
10.2 ± 0.1mm
Loading motor
TYPE − B
0.3~0.5mm
Coupling
10 ± 0.1mm
Loading motor

Fig. 2 − 7 − 3 F0D015

## 2-8 Pinch Roller

### 2-8-1 Removal (Refer to Fig. 2-8-1, 2-8-2.)

A. Set the VCR to the eject mode.
B. Remove the pinch roller arm cap and the grip ring which secures the pinch roller arm assembly.
C. Pull the pinch roller arm assembly upwards to remove.
D. Remove the pinch roller cap from the pinch roller arm, and remove the pinch roller. (Refer to Fig. 2-8-2.)

### 2-8-2 Installation (Refer to Fig. 2-8-1,2-8-2.)

A. Assemble the pinch roller cap and the pinch roller to the pinch roller arm by exercising care with the installation angle of the pinch roller cap and the marking of the Pinch Roller. (Refer to Fig. 2-8-2.)
B. Assemble the pinch roller assembly to the shaft on the main plate.
C. Secure the pinch roller arm assembly with the pinch roller arm cap and the grip ring.

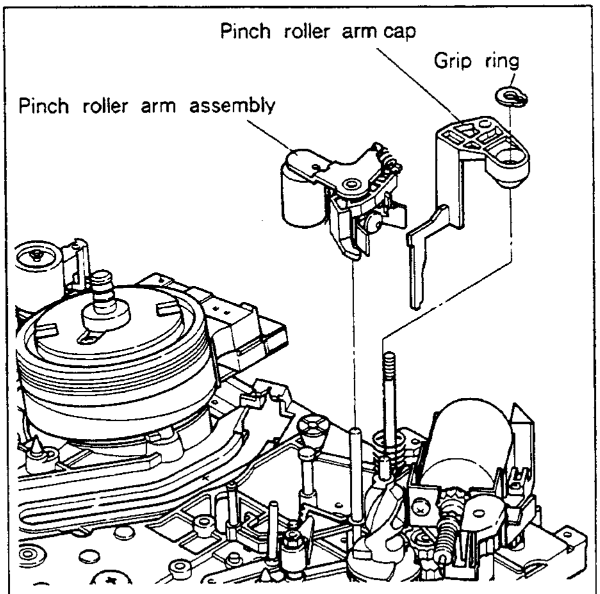

Pinch roller arm cap
Grip ring
Pinch roller arm assembly

Fig. 2-8-1

F0D016

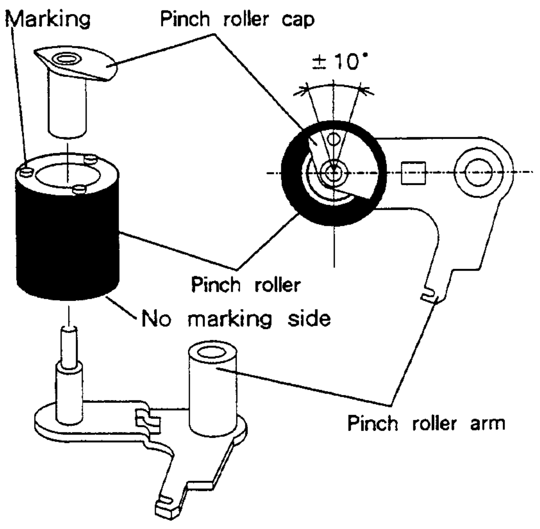

Marking
Pinch roller cap
± 10°
Pinch roller
No marking side
Pinch roller arm

Fig. 2-8-2

F0D017

## 2-9 Mode Switch

**Note** :
Replace the mode switch with the VCR in the eject mode.

### 2-9-1 Removal (Refer to Fig. 2-9-1)

A. Unsolder the five soldered joints of the mode switch from the deck PCB.

B. Unfasten two catches fastening the switch to the deck PCB assembly.
(Exercise care as the catches may be broken off.)

C. Remove the mode switch slowly while assuring that the soldered joints are all unsoldered.

### 2-9-2 Installation ( Refer to Fig. 2-9-1,2-9-2.)

A. Line the matching marks of the mode switch.
(Refer to Fig. 2-9-2.)

B. Finely adjust the mode switch so that continuity at each terminal shall be as given in the illustration.

C. Fasten the switch to the deck PCB with care so that the switch shall not turn, and secure with two catches.(Refer to Fig. 2-9-1.)

D. Solder the five terminals which connect the mode switch to the deck PCB assembly.

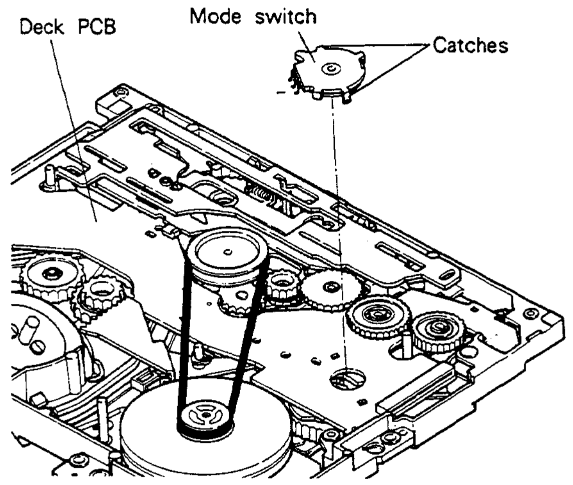

Deck PCB
Mode switch
Catches

Fig. 2 - 9 - 1 F0D018

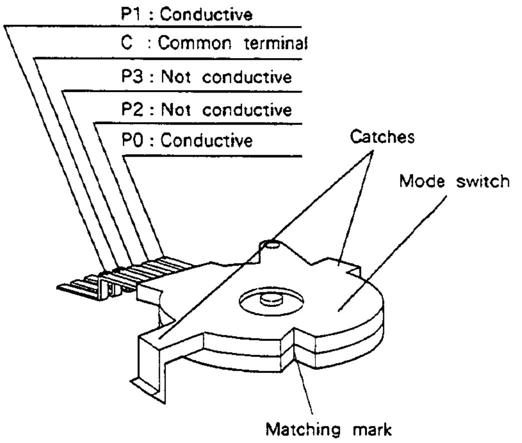

P1 : Conductive
C : Common terminal
P3 : Not conductive
P2 : Not conductive
P0 : Conductive
Catches
Mode switch
Matching mark

Fig. 2 - 9 - 2 F0D019

## 2-10 Supply Reel Disk

### 2-10-1 Removal (Refer to Fig. 2-10-1~2-10-3.)

A. Remove the cassette housing as in Para. 2-1-1.

B. Unscrew the screw ⓐ which fastens the T band holder.

C. Unfasten the catch of the T band holder from the main plate with a small screw driver etc. as shown in Fig. 2-10-2.
Raise and remove the T band holder with care not to score or dirty the tension brake belt.

D. Detach the tension spring from the tension arm and the tension lever.

E. Remove the grip ring ⓑ which secures the tension arm. Raise the tension arm upward to remove it from the shaft.

F. Detach the tension regulation spring S from the tension regulating arm S and the tension lever.

G. Detach the safety lever spring from the safety lever and the tension lever.

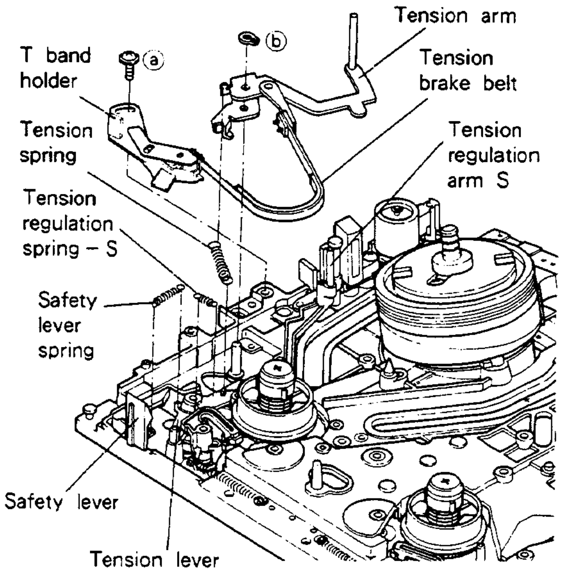

Tension arm
T band holder
ⓐ
ⓑ
Tension brake belt
Tension spring
Tension regulation arm S
Tension regulation spring - S
Safety lever spring
Safety lever
Tension lever

Fig. 2 - 10 - 1 F0D020

H. Raise the tension lever avoiding the main brake S and remove the lever from the shaft. (Refer to Fig. 2-10-3.)

I. Raise the tension regulation arm S and remove it from the shaft.

J. While turning the main brake S slightly clockwise to separate the brake from the supply reel disk, raise the supply reel disk to remove it from the shaft.(Refer to Fig. 2-10-3.)

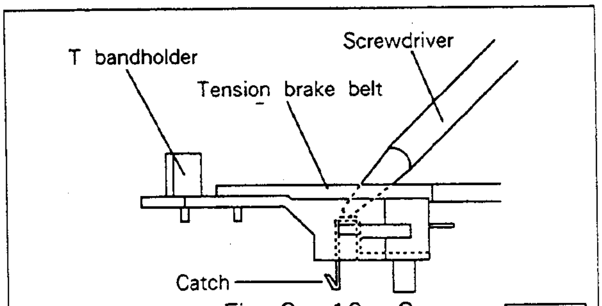

T bandholder
Screwdriver
Tension brake belt
Catch

Fig. 2 – 10 – 2 F0D021

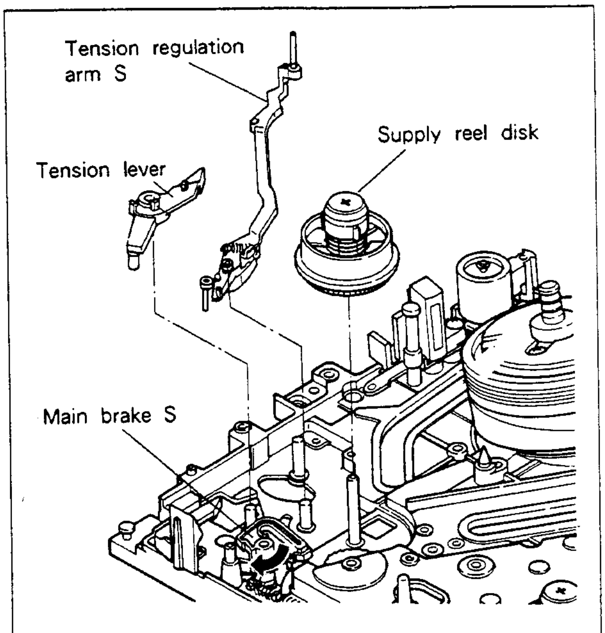

Tension regulation arm S
Supply reel disk
Tension lever
Main brake S

Fig. 2 – 10 – 3 F0D022

### 2-10-2 Installation (Refer to Fig. 2-10-4~2-10-7.)

A. Turn the main brake S slightly clockwise to separate it from the supply reel disk shaft, and mount the supply reel disk on the shaft so that the reel gear meshes with the gear of the supply reel disk.

B. Assemble the tension regulation arm S to the shaft.

C. Assemble the tension lever to the shaft avoiding the main brake S.

**Note** :
Install the tension lever so that the pin at the lower part of the lever shall be in front of the slot in the main plate (viewing the front).

D. Fasten the safety lever spring to the safety lever and the tension lever.

E. Fasten the tension regulation spring S to the tension regulation arm S and the tension lever.

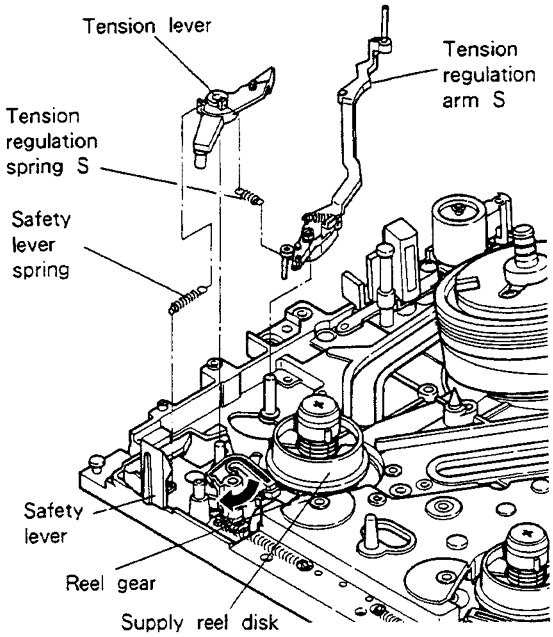

Tension lever
Tension regulation arm S
Tension regulation spring S
Safety lever spring
Safety lever
Reel gear
Supply reel disk

Fig. 2 – 10 – 4 F0D023

F. Assemble the tension arm to the shaft and secure the arm with the grip ringⓑ.(Refer to Fig. 2-10-5.)

G. Fasten the tension spring to the tension arm and the tension lever.(Refer to Fig. 2-10-5.)

H. Assemble the T band holder to the main plate with care not to score or dirty the tension brake belt, and secure the holder with the screwⓐ lightly.(Refer to Fig. 2-10-5.)

**Note** :

In the assembly of the T band holder, make certain that the hook of the holder positively engages with the reverse side of the main plate.

If the hook is difficult to engage with the main plate, push the hook lightly with a small screw driver etc.(Refer to Fig. 2-10-2.)

I. Separate the main brake S and the tension regulation arm S from the supply reel disk and make certain that the disk turns freely.

J. Place the reel disk adjusting jig (Part Number 859C342020) in the reference position on the main plate.(Refer to Fig. 2-10-6.)

K. Slowly turn the jig about the point A and make sure that the height of the supply reel disk flange shall agree with the point B on the supply disk adjusting side of the jig (marked SP).(Refer to Fig. 2-10-7.)

L. If the height of the disk is not satisfactory, hold the disk so that it shall not turn, and turn the height adjusting screw at the top of the disk to adjust the height. (Refer to Fig. 2-11-3.)

A) Turn the screw clockwise if the measured height is low.

B) Turn the screw counterclockwise if the measured height is high.

M. On completion of adjustment, lock the height adjusting screw by burning it with the tip of the hot iron.

N. Install the cassette housing as in Para. 2-1-2.

O. Adjust back tension and tension pole position as outlined in Para. 3-1.

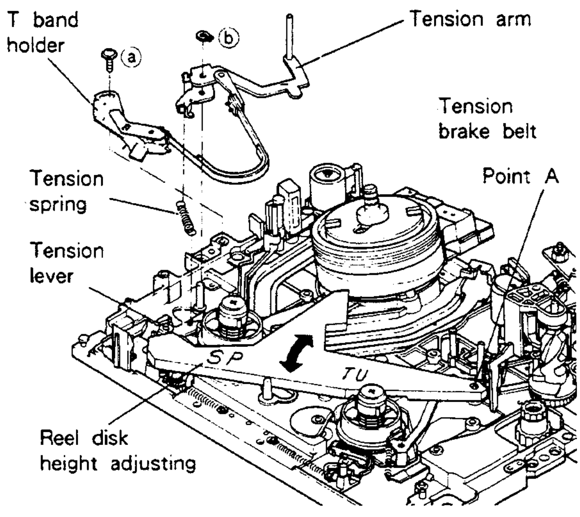

T band holder
ⓑ
ⓐ
Tension arm
Tension brake belt
Point A
Tension spring
Tension lever
SP
TU
Reel disk height adjusting

Fig. 2 − 10 − 5

F0D024

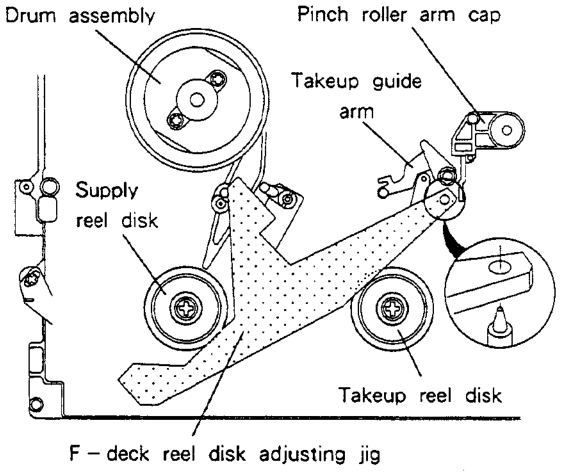

Drum assembly
Pinch roller arm cap
Takeup guide arm
Supply reel disk
Takeup reel disk
F − deck reel disk adjusting jig

Fig. 2 − 10 − 6

F0D025

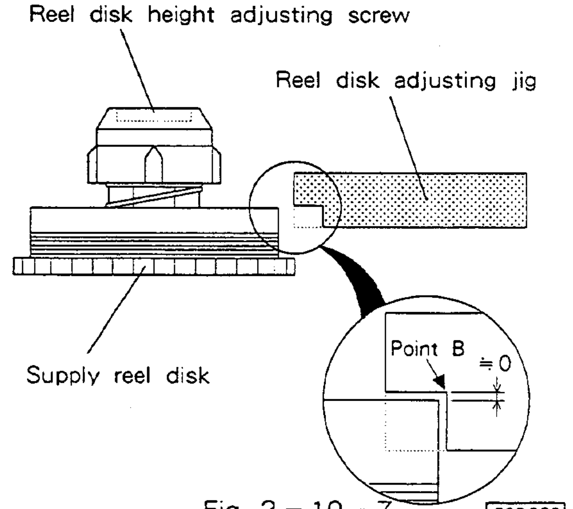

Reel disk height adjusting screw
Reel disk adjusting jig
Supply reel disk
Point B
≒0

Fig. 2 − 10 − 7

F0D026

## 2-11 Takeup Reel Disk

### 2-11-1 Removal (Refer to Fig. 2-11-1.)

A. Remove the cassette housing as in Para. 2-1-1.

B. Detach the spring RS and the tension regulation spring T from the tension regulation arm T and the lever RS.

C. Remove the cut washer which fastens the tension regulation arm T.

D. Turn the takeup guide arm slightly clockwise and raise the tension regulation arm T to remove it from the shaft.

E. Turn the main brake slightly counterclockwise to separate the brake from the takeup reel disk and raise the disk upwards to remove it from the shaft.

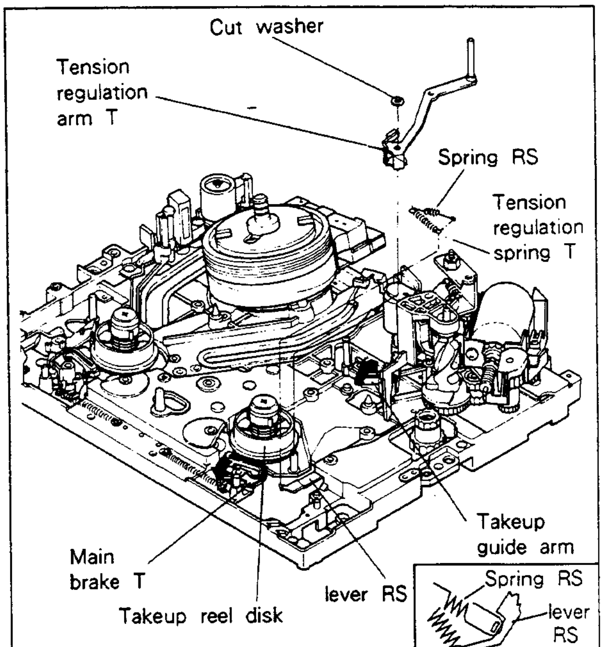

Cut washer
Tension regulation arm T
Spring RS
Tension regulation spring T
Takeup guide arm
Main brake T
lever RS
Takeup reel disk
Spring RS
lever RS

Fig. 2 − 11 − 1

F0D027

### 2-11-2 Installation (Refer to Fig. 2-11-2, 2-11-3.)

A. Turn the main brake T slightly counterclockwise to release the takeup reel disk shaft. Slip the takeup reel disk onto the shaft so that the gear of the takeup reel shall mesh with the reel gear.

B. Turn the takeup guide arm slightly clockwise and install the tension regulation arm T to the shaft. Secure the arm with a cut washer.

C. Fasten the tension regulation spring T and the spring RS to the tension regulation arm T and the lever RS.

D. Separate the main brake T and the tension regulation arm T from the takeup reel disk and make certain that the takeup reel disk turns freely.

E. Place the reel disk adjusting jig (Part Number 859C342020) in the reference position on the main plate. (Refer to Fig. 2-10-6.)

F. Turn the jig slowly about the point A towards the takeup reel disk to make certain that the height of the disk flange agrees with the point B on the takeup side of the jig (marked TU). (Refer to Fig. 2-11-3.)

G. If the height of the disk is not satisfactory, hold the disk so that it shall not turn, and turn the height adjusting screw at the top of the disk to adjust the height. (Refer to Fig. 2-11-3.)
   A) Turn the screw clockwise if the measured height is low.
   B) Turn the screw counterclockwise if the measured height is high.

H. On completion of height adjustment, lock the adjusting screw by burning it with the tip of the hot iron.

I. Install the cassette housing as in Para. 2-1-2.

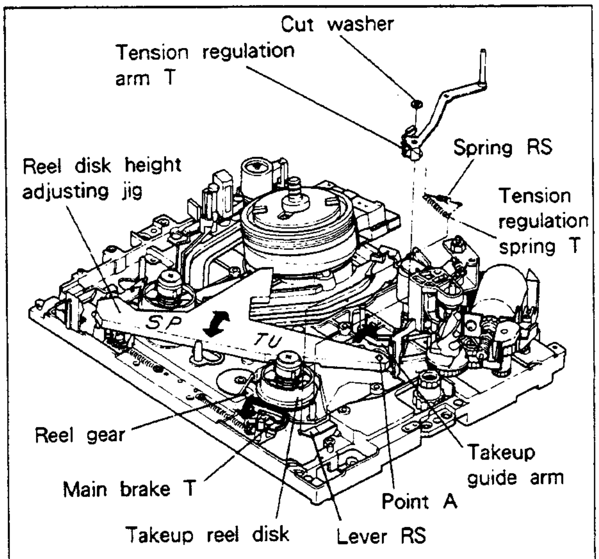

Cut washer
Tension regulation arm T
Spring RS
Reel disk height adjusting jig
Tension regulation spring T
SP
TU
Reel gear
Takeup guide arm
Main brake T
Point A
Takeup reel disk
Lever RS

Fig. 2 − 11 − 2

F0D028

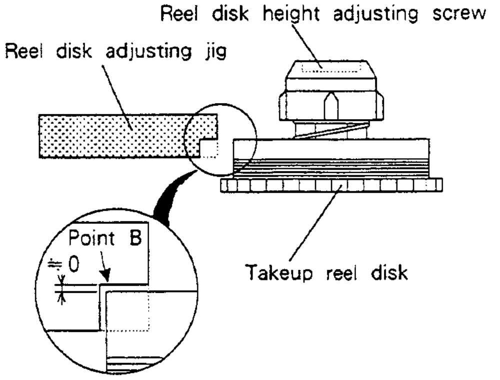

Reel disk height adjusting screw
Reel disk adjusting jig
Point B
≒0
Takeup reel disk

Fig. 2 − 11 − 3

F0D029

## 2-12 A/C Head

### 2-12-1 Removal (Refer to Fig. 2-12-1, 2-12-2.)

A. Disconnect the connector from the A/C head PCB.

B. Remove the nut which fastens the A/C head assembly.

C. Raise upwards and remove the A/C head assembly from the shaft by paying attention to the A/C arm spring which turns the A/C head assembly clockwise.

D. Remove three A/C head fastening screws (ⓐ, ⓑ, and ⓒ) and the A/C spring shown in Fig. 2-12-2, and remove the A/C head from the A/C arm.

E. Unsolder the A/C head PCB from the A/C head.(Refer to Fig. 2-12-2.)

### 2-12-2 Installation (Refer to Fig. 2-12-1~2-12-3.)

A. Solder the A/C head PCB to the A/C head. (Refer to Fig. 2-12-2.)

B. Fasten the A/C head to the A/C arm with three screws (ⓐ, ⓑ, and ⓒ) and the A/C spring.

**Note** :
Install the A/C head to the A/C arm so that the base surface of the A/C head shall be parallel to the A/C arm, and their spacing and the A/C head installation screwⓒ height shall be as specified in Fig. 2-12-3.

C. Assemble the A/C head assembly to the shaft while turning the A/C arm spring counter-clockwise about 60°.(Refer to Fig. 2-12-1.)

D. Tighten the A/C head assembly fastening nut so that the base surface of the A/C head shall be about 7mm above the main plate surface.(Refer to Fig. 2-12-3.)

E. Plug in the connector to the A/C head PCB. (Refer to Fig. 2-12-1.)

F. Conduct the A/C head adjustment and the phase adjustment as outlined in Para. 3-3 and 3-4.

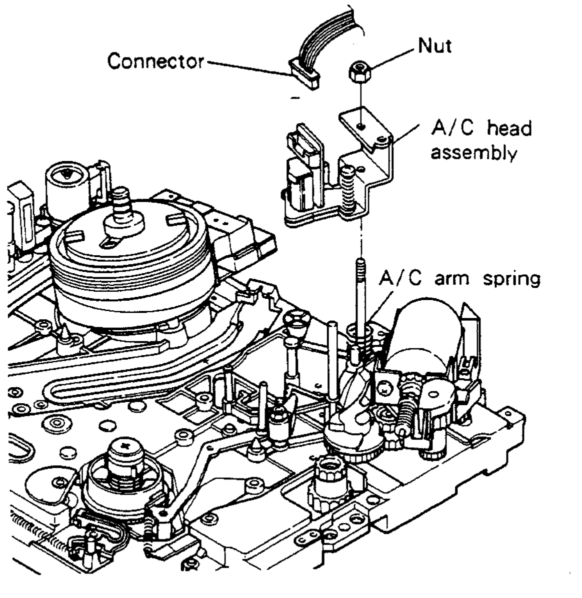

Connector
Nut
A/C head assembly
A/C arm spring

Fig. 2 − 12 − 1

F0D030

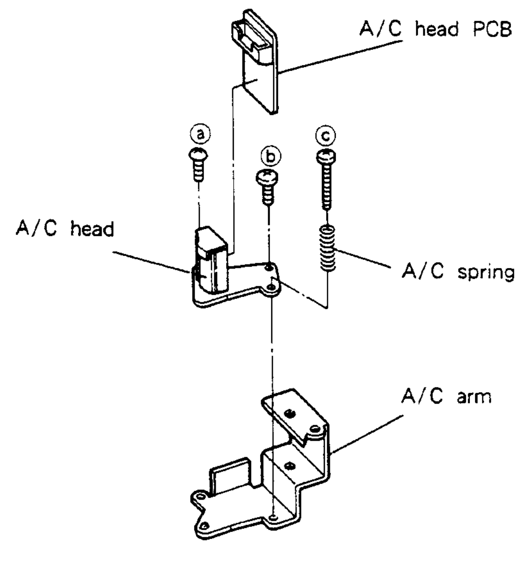

A/C head PCB
ⓐ
ⓑ
ⓒ
A/C head
A/C spring
A/C arm

Fig. 2 − 12 − 2

F0D031

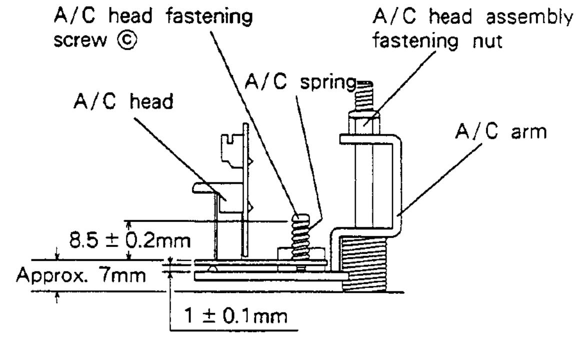

A/C head fastening screw ⓒ
A/C head assembly fastening nut
A/C spring
A/C head
A/C arm
8.5 ± 0.2mm
Approx. 7mm
1 ± 0.1mm

Fig. 2 − 12 − 3

F0D032

## 2-13 Take Up Guide Arm

### 2-13-1 Removal (Refer to Fig. 2-13-1.)

A. Set the VCR in the eject mode.
B. Remove the pinch roller arm assembly. (Refer to Para. 2-8 "Pinch Roller.")
C. Raise and separate the pinch roller cam and the TU-G gear arm from the shaft at the same time.
D. Remove the takeup guide arm fastening nut. Raise and separate the takeup guide arm from the shaft with care not to lose the TU-G spring.

### 2-13-2 Installation (Refer to Fig. 2-13-1~2-13-3.)

A. Install the TU-G spring and the takeup guide arm so that one end of the TU-G spring is fastened to the takeup guide arm and the other end is fastened to the hook of the main plate. Secure them with the fastening nut temporarily.
B. Place the reel disk adjusting jig (for the F deck) in the reference position on the main plate (Refer to Fig. 2-10-6). Tighten the takeup guide arm fastening nut so that the lower flange of the takeup guide arm is level with point B of the height adjusting jig (for the E deck). (Refer to Fig. 2-13-2.)
C. Turn the takeup tension lever fully clockwise as shown in Fig. 2-13-1.
D. Line the matching mark on the gear arm and beginning of gear section on the takeup guide arm, and line the matching mark on the pinch roller cam and centre of gear on the joint gear as shown in Fig. 2-13-3, and install the pinch roller cam and the TU-G gear to the shaft at the same time.
E. Assemble the pinch roller assembly to the shaft on the main plate.
F. Secure the pinch roller arm assembly with the pinch roller arm cap and the grip ring.

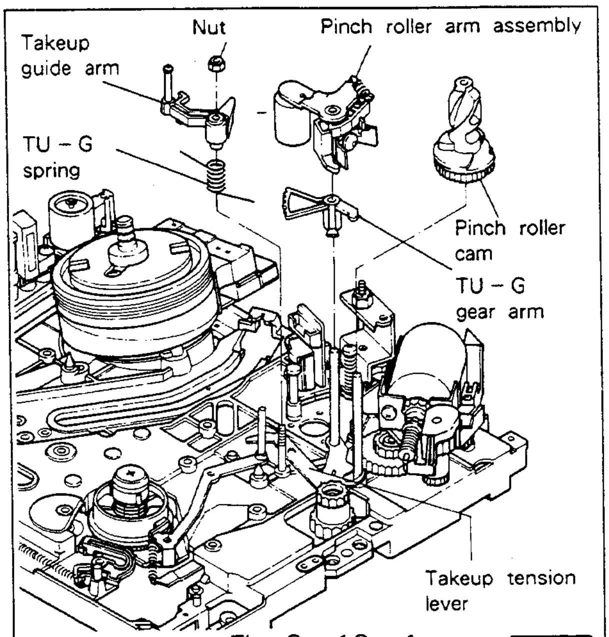

Takeup guide arm
Nut
Pinch roller arm assembly
TU-G spring
Pinch roller cam
TU-G gear arm
Takeup tension lever
F0D033

Fig. 2-13-1

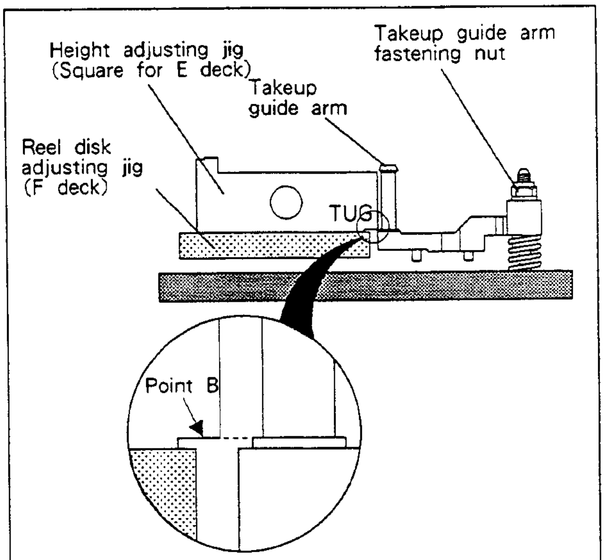

Height adjusting jig (Square for E deck)
Takeup guide arm fastening nut
Takeup guide arm
Reel disk adjusting jig (F deck)
TUG
Point B
F0D034

Fig. 2-13-2

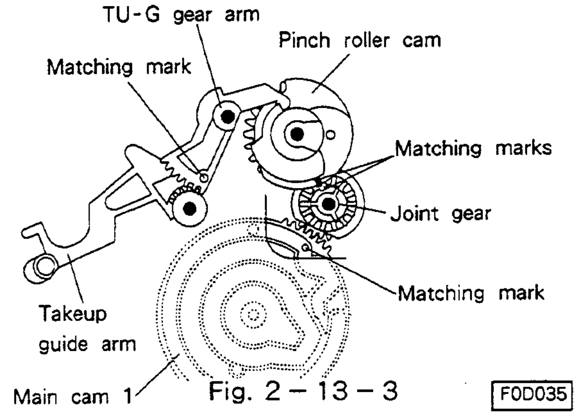

TU-G gear arm
Pinch roller cam
Matching mark
Matching marks
Joint gear
Matching mark
Takeup guide arm
Main cam 1
F0D035

Fig. 2-13-3

## 2-14 Deck PCB (Printed Circuit Board)

### 2-14-1 Removal (Refer to Fig. 2-14-1, 2-14-2.)

A. Detach the capstan brake spring from the capstan brake and the loading gear arm.
B. Remove the reel belt from the bottom of the deck.(Refer to Fig. 2-5.)
C. Detach two grip ringsⓕ shown in Fig. 2-14-2 and remove the loading gear arm.
D. Unsolder the terminals of the FE head.
E. Unfasten the catches and remove the F/L gear 2, 3 and 4.(Refer to Fig. 2-14-2.)
F. Remove grip ringⓖ and cut washerⓗ, and unfasten three catches shown in Fig. 2-14-3 to remove the cam plate B.(Refer to Fig. 2-14-2.)
G. Unscrew five fastening screws (ⓐ to ⓔ) and remove the deck PCB.(Refer to Fig. 2-14-2.)

### 2-14-2 Installation (Refer to Fig. 2-14-1~2-14-3.)

A. Make certain that the mode switch is set to the eject position.(Refer to section 2-9.) Fasten the deck PCB with five screws and solder the FE head terminals. (Refer to Fig. 2-14-1.)
**Note** :
The safety lever is normally held leftward with a spring. Pull the safety lever forwards and install the deck PCB.
B. Install the cam plate B by paying attention to the pinⓐ to ⓖ positions shown in Fig. 2-14-3, and secure the plate with three catches, grip ringⓖ and cut washerⓗ.
C. Line the matching mark on the loading arm T and that on the loading gear arm as shown in Fig. 2-14-3, and assemble the loading gear arm so that the pin of the loading gear arm enters the groove of the main cam 2. Secure the loading gear arm with two grip ringsⓕ.
D. Assemble the F/L gear 2, 3, and 4 to the shafts.
E. Install the reel belt.(Refer to Fig. 2-5.)
F. Fasten the capstan brake spring to the capstan brake and the loading gear arm from the top side of the deck.(Refer to Fig. 2-14-1.)

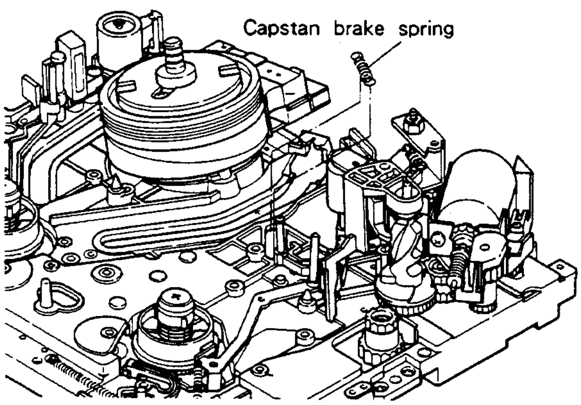

Capstan brake spring

Fig. 2 – 14 – 1 F0D036

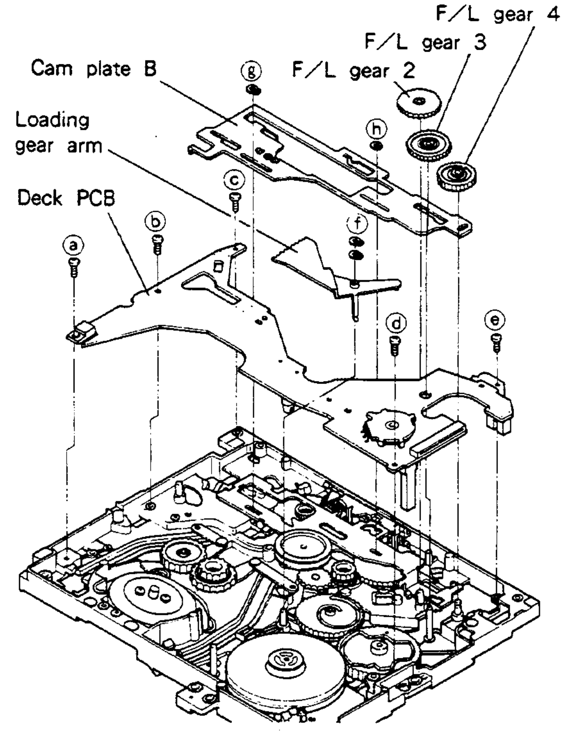

F/L gear 4
F/L gear 3
Cam plate B
ⓖ
F/L gear 2
Loading gear arm
ⓗ
ⓒ
Deck PCB
ⓑ
ⓕ
ⓐ
ⓓ
ⓔ

Fig. 2 – 14 – 2 F0D037

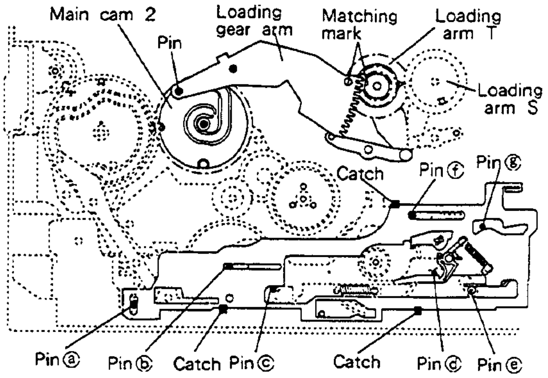

Main cam 2
Pin
Loading gear arm
Matching mark
Loading arm T
Loading arm S
Catch
Pinⓕ
Pinⓖ
Pinⓐ
Pinⓑ
Catch
Pinⓒ
Catch
Pinⓓ
Pinⓔ

Fig. 2 – 14 – 3 F0D038

## 2-15 Positioning and Installation Sequence of Parts Around Main Cam 1 (Bottom Side of Deck) (Refer to Fig. 2-15-1~2-15-6.)

**Note** :
Set the VCR to the eject mode to install the main cam 1 and its peripheral parts.

A. Line the positioning hole in the lever RS and that of the main plate, and assemble the lever RS to the shaft.

B. Line the positioning hole in the lever C with that of the main plate, and assemble the lever C to the shaft.

C. With care not to move the lever RS and lever C, assemble the main cam 1 to the shaft by lining the matching mark of the joint gear with the positioning hole of main plate. Secure the main cam 1 with the grip ring.(Refer to Fig. 2-15-2.)
**Note** :
The pins of the lever RS and the lever C enter the groove of the main cam 1 when the levers are lined with the positioning holes.
Make certain that the pins of the levers enter the groove of the main cam 1.

D. Assemble the thrust washer to the pinⓒ shown in Fig. 2-15-2, and install the cam plate C so that the corresponding positions of the plate shall match the pinsⓐ to ⓖ.

E. Fasten the cam spring C to the cam plate C and the cam plate holder.(Refer to Fig. 2-15-2.)

F. Assemble the lever B to the shaft so that the pin of the lever shown in Fig. 2-15-3 shall enter the groove of the main cam 1. Secure the lever with a grip ring.

G. Line the positioning hole of the F/L idler lever with that of the main plate.(Refer to Fig. 2-15-3.)
**Note** :
The pin of the F/L idler lever enters the groove of the main cam 2 when the positioning hole of the F/L idler lever is lined.
Make certain that the pin of the lever enters the groove of the main cam 2.

H. Line the matching mark of the main cam 2 with that of the main cam 1, and also the positioning hole of the main cam 2, and assemble the main cam 2 to the shaft. (Refer to Fig. 2-15-3.)
**Note** :
Make certain that the pin of the F/L idler lever correctly enters in the groove of the main cam 2.

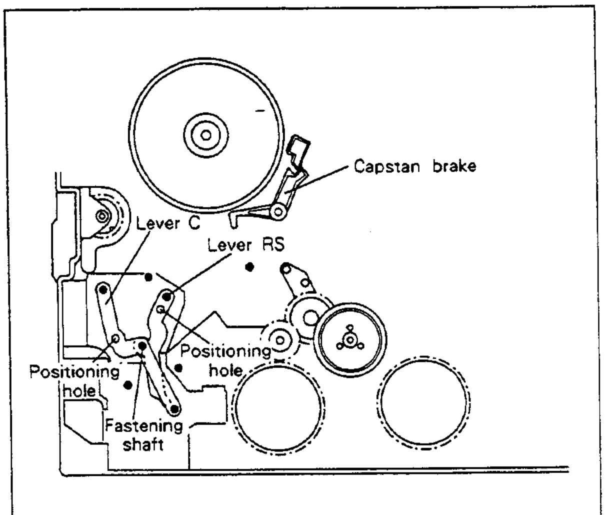

Capstan brake
Lever C
Lever RS
Positioning hole
Positioning hole
Fastening shaft

Fig. 2 − 15 − 1 F0D039

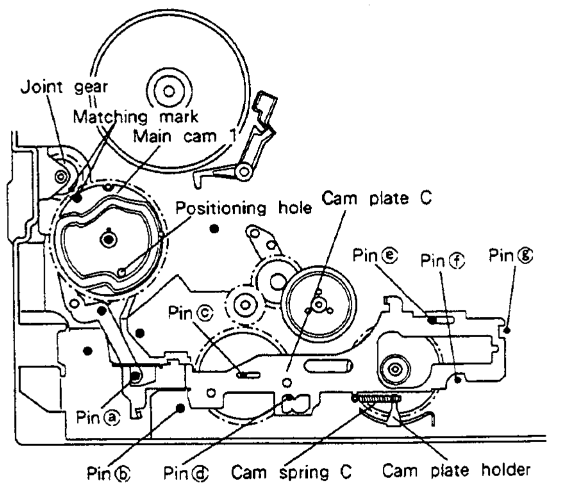

Joint gear
Matching mark
Main cam 1
Positioning hole
Cam plate C
Pinⓔ
Pinⓕ
Pinⓖ
Pinⓒ
Pinⓐ
Pinⓑ
Pinⓓ
Cam spring C
Cam plate holder

Fig. 2 − 15 − 2 F0D040

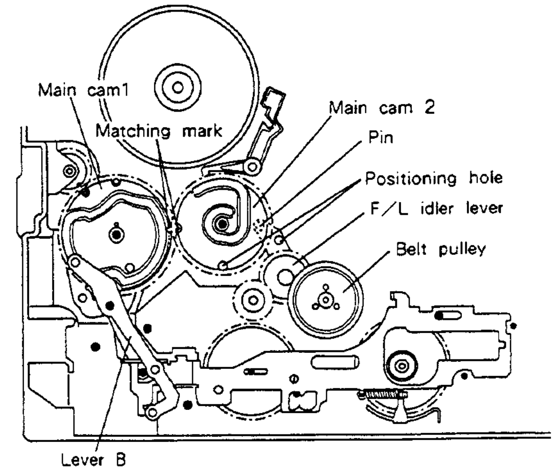

Main cam1
Matching mark
Main cam 2
Pin
Positioning hole
F/L idler lever
Belt pulley
Lever B

Fig. 2 − 15 − 3 F0D041

I. Make certain that the mode switch is in the eject position. Fasten the deck PCB assembly with five screws and solder the FE head terminals. (Refer to Fig. 2-14-2 and 2-14-1.)
**Note** :
The safety lever is normally held in the leftward position by the spring. Pull the lever forwards and install the deck PCB assembly.
J. Install the cam plate B so that the plate shall match the pins ⓐ to ⓖ as shown in Fig. 2-15-4, especially the pin ⓔ, and secure the plate with three clamps, cut washer (pin ⓑ) and grip ring (pin ⓕ).
K. Line the matching mark of the loading arm T with that of the loading gear arm as shown in Fig. 2-15-4, and assemble the loading gear arm to the shaft so that the pin of the loading gear arm shall enter the groove of the main cam 2. Secure the arm with two grip rings ⓕ. (Refer to Fig. 2-15-5.)
L. Assemble the F/L gear 2, 3 and 4 to the shafts as shown in Fig. 2-15-5.
M. Install the reel belt. (Refer to Fig. 2-5.)
N. Fasten the tension regulation spring T and the spring RS to the tension regulation arm T and the lever RS from the top side of the deck. (Refer to Fig. 2-11-1.)
O. Fasten the capstan brake spring to the capstan brake and the loading gear arm from the top side of the deck. (Refer to Fig. 2-15-6.)

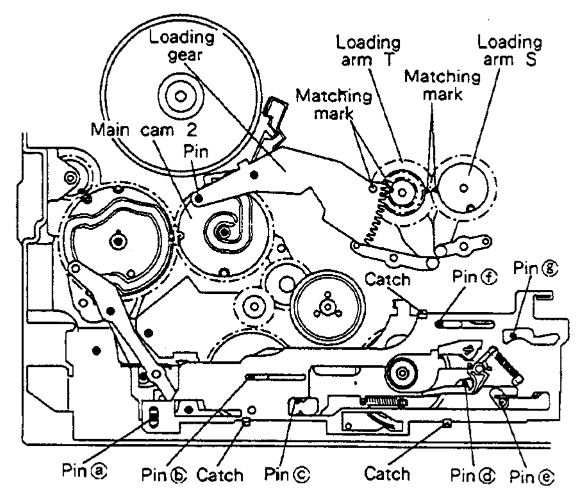

Loading gear
Loading arm T
Loading arm S
Matching mark
Matching mark
Main cam 2
Pin
Catch
Pin ⓕ
Pin ⓖ
Pin ⓐ
Pin ⓑ
Catch
Pin ⓒ
Catch
Pin ⓓ
Pin ⓔ

Fig. 2 – 15 – 4

F0D042

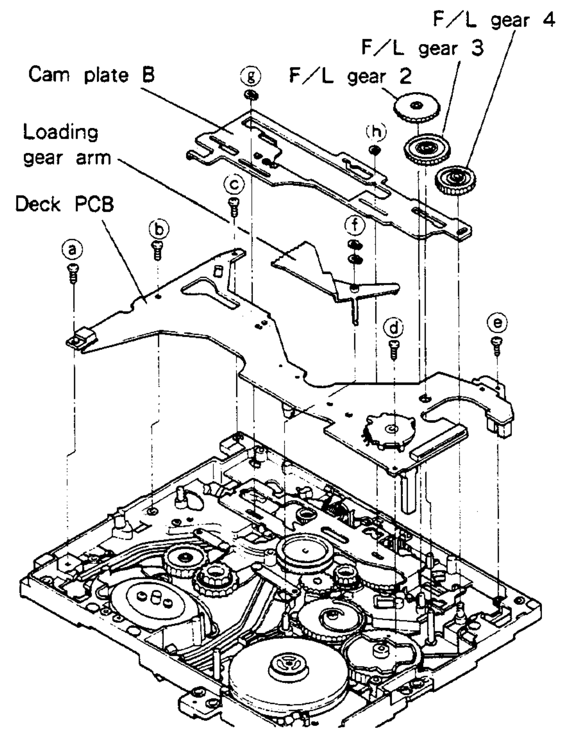

F/L gear 4
F/L gear 3
Cam plate B
ⓖ
F/L gear 2
Loading gear arm
ⓗ
ⓒ
Deck PCB
ⓑ
ⓐ
ⓕ
ⓓ
ⓔ

Fig. 2 – 15 – 5

F0D037

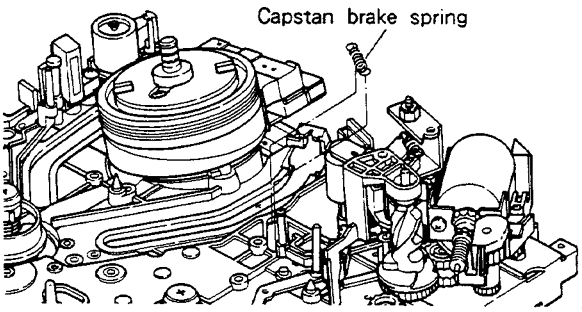

Capstan brake spring

Fig. 2 – 15 – 6

F0D036

## 2-16 Supply and Takeup Guide Rollers

### 2-16-1 Removal (Refer to Fig. 2-16.)

A. Remove the cassette housing as in Para. 2-1-1.
B. Loosen the set screw to such a degree as the guide roller turns lightly.
C. Loosen the guide roller height adjusting screw located at the top of the guide roller by turning counterclockwise with the height adjusting screwdriver. Raise and remove the roller from the tape guide.

### 2-16-2 Installation (Refer to Fig. 2-16.)

A. Make certain that the fastening thread section of a new guide roller is provided with a rubber ring.
B. Set the new guide roller in the tape guide fastening hole.
C. Turn the guide roller slowly clockwise till it becomes heavy.
D. Turn further about 1/6 turns from a point where the guide roller becomes heavy, and return the roller about one turn counter-clockwise.
E. Again turn the guide roller slowly clockwise till it becomes heavy. Turn the roller further about 1/6 turn from the point where the roller becomes heavy.
F. Secure the guide roller lightly with the set screw. Check and adjust the envelope as in Para. 3-2.

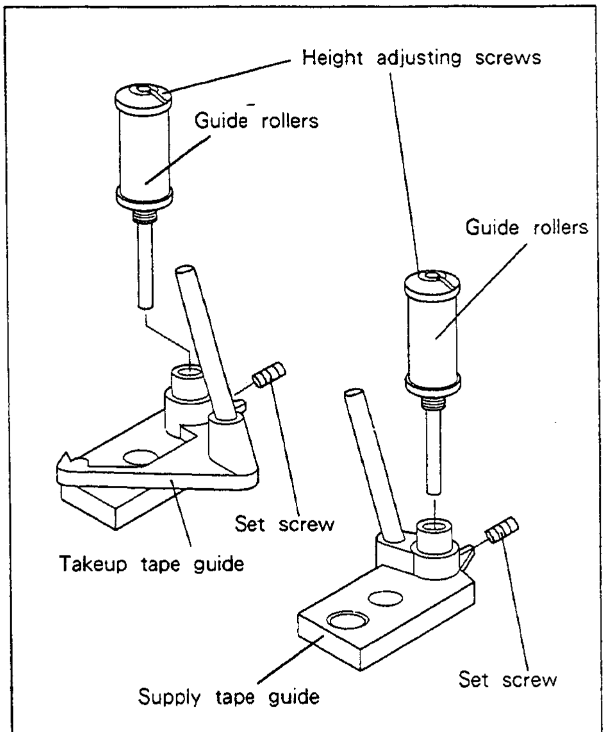


Fig. 2 – 16 F0D043

## 2-17 Supply and Takeup Tape Guide Assemblies

**Note** :
Refer to section 3-2-7 and 3-3-3 before replacing the supply or takeup tape guide assemblies.

### 2-17-1 Removal (Refer to Fig. 2-17-1~2-17-4.)

A. Remove the cassette housing as in Para. 2-1-1.
B. Detach the capstan brake spring from the capstan brake and the loading gear arm.
C. Remove the reel belt. (Refer to Fig. 2-5.)
D. Secure the tension arm and the tension regulation arm S with a rubber band etc. so as to separate them from the supply guide roller.

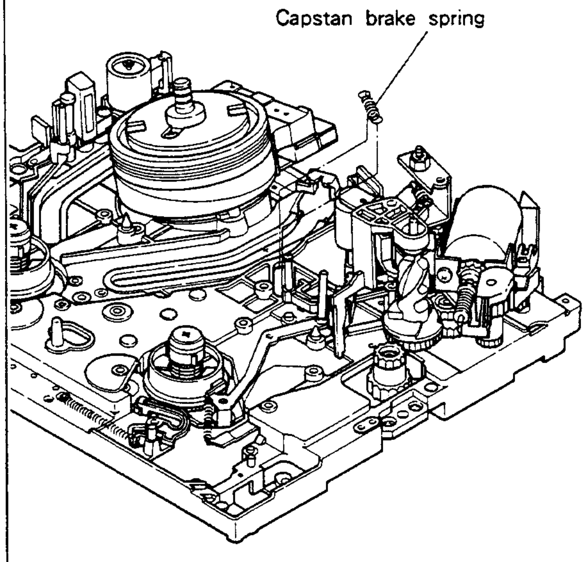


Fig. 2 – 17 – 1 F0D036

E. Remove the grip ring and remove the loading gear arm.(Refer to Fig. 2-17-2.)
F. Turn the loading arm S and T to the loading position.(Refer to Fig. 2-17-2.)
G. Unfasten the clamp shown in Fig. 2-17-3, and remove the loading arm S.
H. Remove the loading arm T further in case of replacing the takeup guide assembly.
I. Unfasten the clamp of the slider which secures the supply or takeup tape guide assembly , and remove the tape guide assembly and the slider from the main plate. (Refer to Fig. 2-17-4.)

### 2-17-2 Installation (Refer to Fig. 2-17-1~2-17-4.)

A. Place a new tape guide assembly on the installation rail of the main plate and install the slider on the reverse side of the main plate so that the catch of the slider enters the fastening hole of the tape guide assembly.
B. If the takeup tape guide is replaced, install the loading arm T at first.(Refer to Fig. 2-14-2.)
C. Install the loading arm T so that the matching mark of the loading arm S is lined with the matching mark of the loading arm T as illustrated in Fig. 2-17-2.
D. Line the matching mark of the loading gear arm with that of the loading arm T, and assemble the loading gear arm to the shaft so that the pin of the loading gear arm enters the groove of the main cam 2. Secure the loading gear arm with two grip rings.
E. Install the reel belt.(Refer to Fig. 2-5.)
F. Fasten the capstan brake spring to the capstan brake and the loading gear arm from the top side of the deck.(Refer to Fig. 2-17-1.)
G. Install the cassette housing as in Para. 2-1-2.

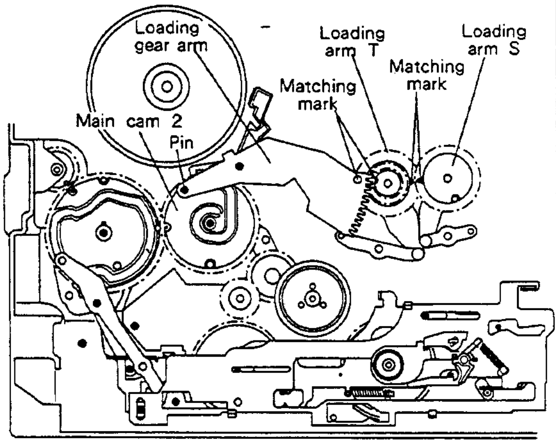

Loading gear arm
Main cam 2
Pin
Loading arm T
Matching mark
Matching mark
Loading arm S

Fig. 2 − 17 − 2 F0D044

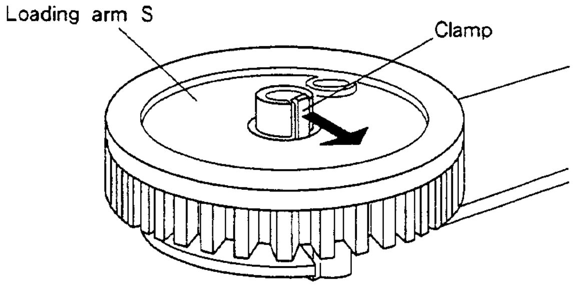

Loading arm S
Clamp

Fig. 2 − 17 − 3 F0D045

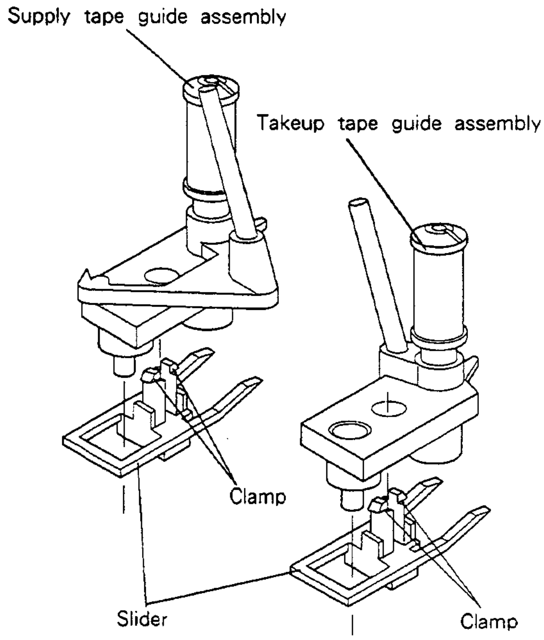

Supply tape guide assembly
Takeup tape guide assembly
Clamp
Slider
Clamp

Fig. 2 − 17 − 4 F0D046

## 3. Interchangeability Adjustment of Mechanism

**Note :**

Tracking may need to be preset in the interchangeability adjustment of the mechanism. Digital tracking should be pre-setted. To preset, short circuit TP8X and TP8Y on the PCB TIMER.

**Note :**

The adjustment is conducted in the playback mode, using the stair step signal of the alignment tape, connect an oscilloscope to TP2A and external Trig. to TP2H, unless otherwise specified.

### 3-1 Adjustment of Back Tension and Tension Pole Position (Refer to Fig. 3-1.)

Run a blank tape for several minutes to break in the reel disks and the transport before beginning the adjustment.

A. Set the back tension measuring jig and set the VCR to the playback mode.

B. When the running of the tape becomes steady, make certain that the tension arm check hole is within the M/P hole of the main plate (0 ± 0.5mm) or the interval between the centre of tension pole and the centre of Supply guide pole is 2 ± 0.5mm.

C. If neither the centre of Tension pole nor the tension arm check hole is in position, loosen the T band holder fastening screw lightly and move the T band holder so that the condition specified by the para.B is satisfied.

D. On completion of adjustment, tighten the T band fastening screw.

E. Make certain that the reading of the back tension measuring jig is 50 ± 6g-cm.

F. When the running of the tape is steady, check visually to make certain that the deflection of the Tension pole is 1mm or less.

**Note :**

Slight fluctuation of back tension may be tolerated, however if fluctuation exceeds 5g-cm, the reel disk etc. may be defective. Examine and correct the defect.

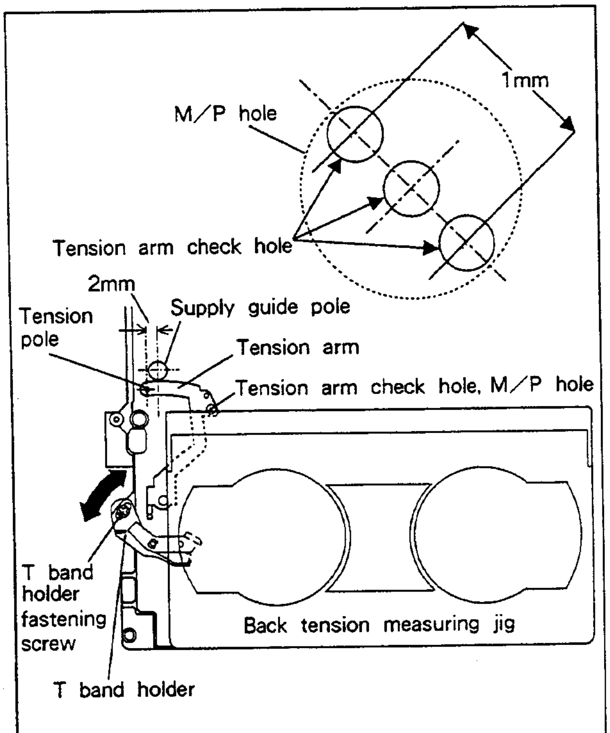

1mm
M/P hole
Tension arm check hole
2mm
Tension pole
Supply guide pole
Tension arm
Tension arm check hole, M/P hole
T band holder fastening screw
Back tension measuring jig
T band holder

Fig. 3 − 1

F0D047

## 3-2 Check and Adjustment of FM Envelope

### 3-2-1 Guide Roller Adjustment (Refer to Fig. 3-2-1.)

A. Set the VCR to the playback mode.

B. Preset tracking.

C. Check if the FM waveform is flat like A shown in Fig. 3-2-1.

D. Adjust the height of the supply guide roller as in 3-2-2 if the leading portion (the entry side of the drum) of the FM waveform is not flat like B or C.
Adjust the height of the takeup guide roller as in 3-2-3 if the trailing portion (the exit side of the drum) is not flat like D or E.

### 3-2-2 Adjustment of Supply Guide Roller Height (Refer to Fig. 3-2-1, 3-2-2.)

A. Loosen the set screw to such a degree as the supply guide roller turns lightly.(Refer to Fig. 3-2-2.)

B. The supply guide roller is low if the leading portion (the entry side of the drum) of the FM waveform is like B, and high if like C. Adjust the height of the roller by turning the adjusting screw at the top of the roller so that the FM waveform shall be flat like A.
- Turn the adjusting screw counterclockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.

C. Carry out the coarse adjustment of phase as in 3-2-4.

### 3-2-3 Adjustment of Takeup Guide Roller Height (Refer to Fig. 3-2-1, 3-2-2.)

A. Loosen the set screw to such a degree as the takeup guide roller turns lightly.(Refer to Fig. 3-2-2.)

B. The takeup guide roller is low if the trailing portion (the exit side of the drum) of the FM waveform is like D, and high if like E. Adjust the height of the roller by turning the adjusting screw at the top of the roller so that the FM waveform shall be flat like A.
- Turn the adjusting screw counterclockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.

C. On completion of height adjustment, adjust the azimuth and height of the A/C head as in 3-3-2.

D. Coarsely adjust the phase as in 3-2-4.

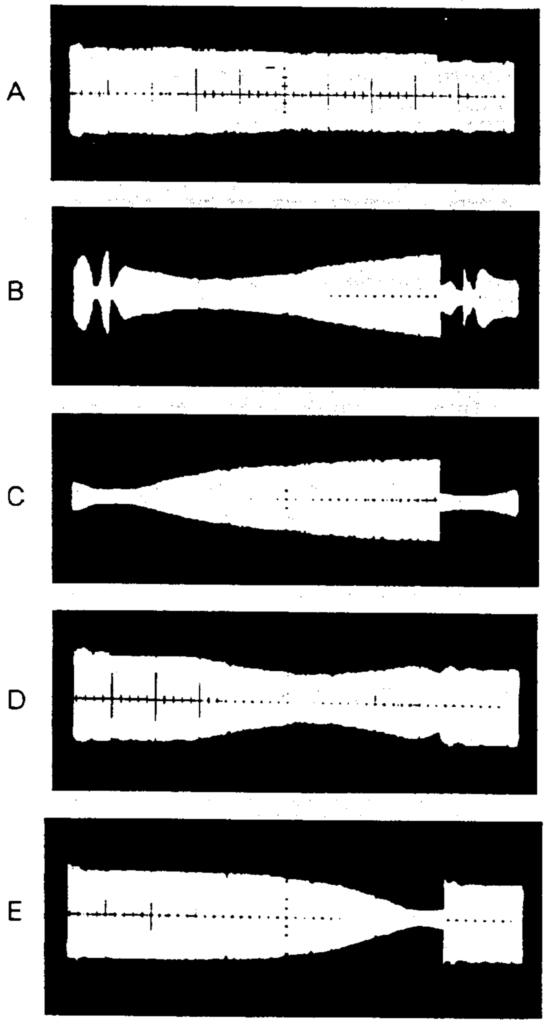


Fig. 3 – 2 – 1 F0D048~052

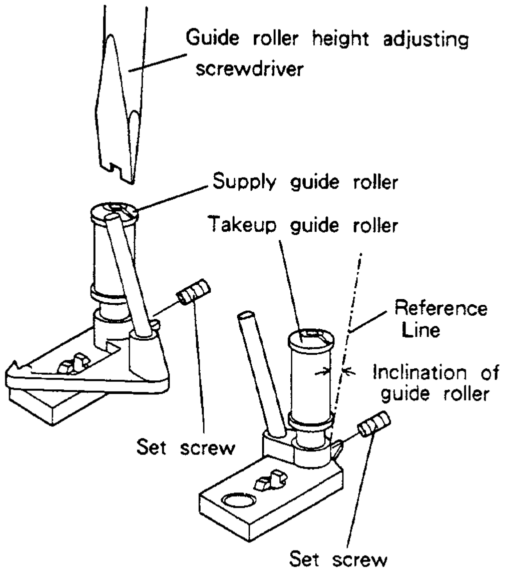


Fig. 3 – 2 – 2 F0D053

### 3-2-4 Coarse Phase Adjustment (Refer to Fig. 3-2-3, 3-2-4.)

A. Set the VCR to the playback mode.
B. Preset tracking.
C. Check the FM waveform after checking and adjusting the guide rollers.
D. If the amplitude of the FM waveform is narrow like F because of out of phase, adjust the phase adjusting nut so that the amplitude of the FM waveform shall be maximum.

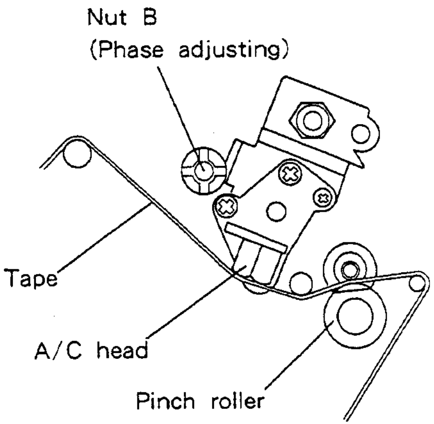


Fig. 3 − 2 − 3 FOD054

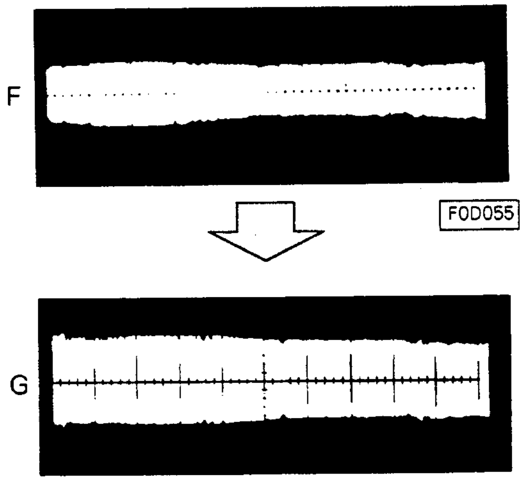
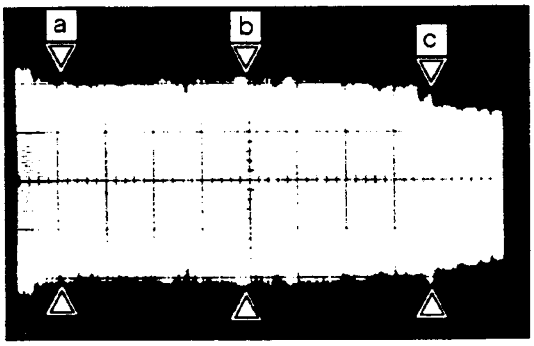


Fig. 3 − 2 − 4 FOD056

### 3-2-5 Check of FM Waveform Flatness (Refer to Fig. 3-2-5.)

A. Set the VCR to the playback mode.
B. Set the tracking switch to the manual mode. Vary tracking and check if the amplitude changes while the waveform remains flat.
C. Adjust tracking in the manual mode so that the amplitude shall be maximum, and adjust the oscilloscope so that the amplitude shall be '5' on the scale of the oscilloscope.
D. Adjust tracking so that the amplitude at the middle (around the point 'b') of the FM wave form is about 80% ('4' on the scale of the scope) of the maximum amplitude. Make certain that the amplitudes around the points 'a' and 'c' satisfy the requirements given in Fig. 3-2-5.
E. If deviating from the requirements, conduct the check and adjustment of the FM envelope as in 3-2 from beginning.



| a | c |
|---|---|
| At least 2.8 of the scale | At least 2.8 of the scale |

Fig. 3 − 2 − 5 FOD057

### 3-2-6 Check 1 : Tape Running Condition on Guide Rollers (Refer to Fig. 3-2-6.)

A. Set the VCR to the playback mode.

B. Visually check if there is a space between the tape and the lower flange of the supply and the take up guide roller.

C. If not, replace the tape guide as in 3-2-7.
**Note** :
In this case the tape guide should be replaced with the tape guide which has a larger inclination.

D. If the supply tape guide is replaced, check the guide roller as in 3-2-1.
If the take up tape guide is replaced, check the guide roller as in 3-2-3, and the waveform flatness as in 3-2-5

E. Load and unload the tape several times to make certain that the flatness of the FM waveform dose not change.

F. If changes occur, check the A/C arm shaft for looseness.
If not free, replace the A/C arm and adjust the audio/control head as in 3-3.

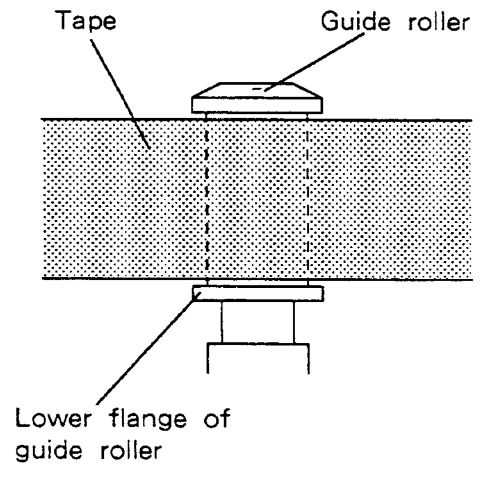


Fig. 3 − 2 − 6

F0D058

### 3-2-7 Replacement of Tape Guides

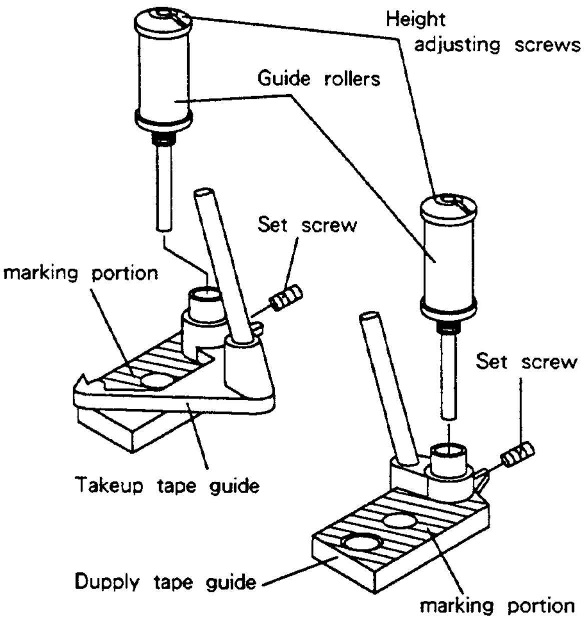
A. Identify the Item Number of the tape guide to be replaced. This is done by observing the marking present on the die-cast portion of the tape guide base, and comparing that marking to Fig. 3-2-7.

B. If the Item Number of the tape guide presently installed is a '2', replace the guide with an Item Number '1' guide.(Part No. 635B059010)

C. If the Item Number of the present tape guide is a '1', replace the guide with an Item Number '3' guide.

D. If the Item Number of the present tape guide is a '3', replace the guide with other Item Number '3' guide.

E. Once the tape guide is replaced, resume alignment starting with 3-2-1.



Identification of Tape Guide Item Number
(Example ; Parts No. 635B0590$\boxed{1}$0)
Item No.

| | |
|---|---|
| Item No.1 | No marking |
| Item No.2 | Marked with black magic marker |
| Item No.3 | Marked with red magic marker |

※The marking point is marked in oblique line portion shown in figure above.

Fig. 3 − 2 − 7

### 3-2-8 Check 2 : Tape Running Condition on Guide Rollers

A. Set the VCR to the playback mode.

B. Press the head of the supply guide roller and the take up guide roller lightly, and release the roller. Check if the FM waveform is quickly restored to the previous level.

C. If the FM waveform is not restored quickly, replace the tape guide as in 3-2-7.

D. If the supply tape guide is replaced, check the guide roller as in 3-2-1.
If the takeup tape guide is replaced, check the guide roller as in 3-2-1, and check the FM waveform as flatness as in 3-2-5

E. If satisfactory, tighten the set screw of the guide roller on the supply side and the take up side.

## 3-3 Adjustment of Audio/Control Head

### 3-3-1 Adjustment of A/C Head Slant (Refer to Fig. 3-3-1.)

A. Play back a blank tape.

B. Turn the screw C slowly clockwise to crease the bottom edge of the tape slightly by the lower flange of the takeup guide pole.

C. Turn the screw C slowly counterclockwise to eliminate the crease of the bottom edge of the tape.

D. Turn the screw C slowly clockwise again and stop turning just before the tape is creased.

### 3-3-2 Adjustment of A/C Head Azimuth and Height (Refer to Fig. 3-3-1~3-3-3.)

A. Using stair step signal of alignment tape, connect an oscilloscope to the audio output terminal and set the VCR to the playback mode.

B. Turn the nut A (height adjusting) and the screw B (azimuth adjusting) so that the audio output level shall be maximum.

C. Turn the A/C head counterclockwise and release it to make certain that the audio output level does not change.

D. If the level changes, check if the A/C arm shaft is loose. If not free, replace the A/C arm and adjust the slant of the A/C head as in 3-3-1 and the azimuth and height of the A/C head from beginning.

E. Apply a force lightly to the A/C head shaft in the direction of A and A' of the arrow shown in Fig. 3-3-3 to make certain that the audio output level remains at maximum level and does not change.

F. If the level changes, turn the nut A (height adjusting) so that the audio output level shall be maximum. Apply a force lightly to the A/C head shaft in the direction of B and B' of the arrow shown in Fig. 3-3-3 and adjust so that the sound output level shall be maximum.

G. Check the sound output level in the playback mode to make sure that the fluctuation of the level is less than 2dBp-p.

H. If the fluctuation exceeds 2dBp-p, adjust the slant of the A/C head and the azimuth and height of the head.

I. If this is still not satisfactory, replace the takeup tape guide as outlined in 3-3-3.

**Note** :
In this case the tape guide should be replaced with a guide which has less inclination.

J. On completion of the above adjustment, adjust phase as in 3-4.

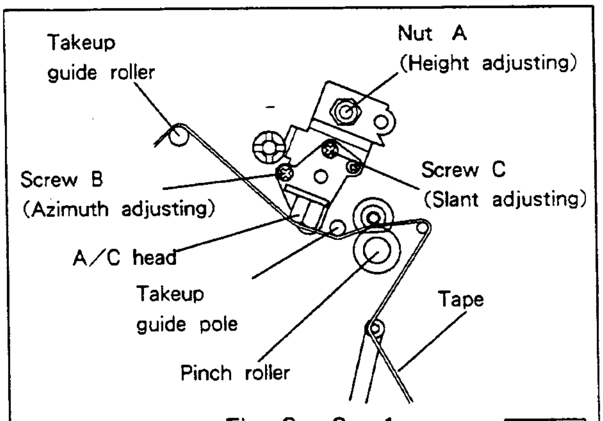


Fig. 3 − 3 − 1 F0D059

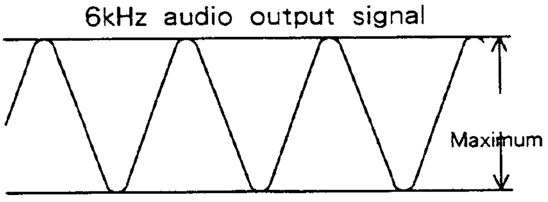


Fig. 3 − 3 − 2 F0D060

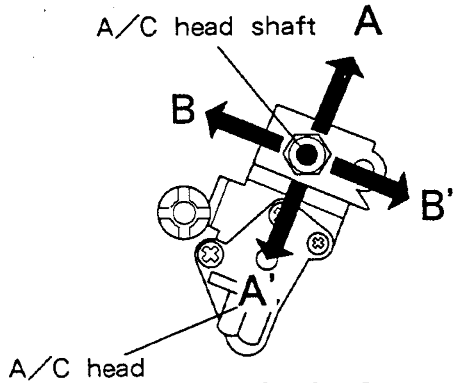


Fig. 3 − 3 − 3 F0D061

Identification of Tape Guide Item Number
(Example ; Parts No. 635B0600$\boxed{1}$0)
Item No.

| | |
|---|---|
| Item No.1 | No marking |
| Item No.2 | Marked with black magic marker |
| Item No.3 | Marked with red magic marker |

※The marking points are marked in the tops of the Takeup and Supply tape guides.(Refer to Fig. 3 − 2 − 7)

Fig. 3 − 3 − 4

### 3-3-3 Replacement of Tape Guides

A. Identify the Item Number of the Tape Guide to be replaced. This is done by observing the marking present on the die-cast portion of the Tape Guide base, and comparing that marking to Fig. 3-3-4.

B. If the Item Number of the tape guide presently installed is a '3', replace the guide with an Item Number '1' guide.

C. If the Item Number of the present tape guide is a '1', replace the guide with an Item Number '2' guide.

D. If the Item Number of the present tape guide is a '2', replace the guide with other Item Number '2' guide.

E. Once the tape guide is replaced, resume alignment starting with 3-2-1.

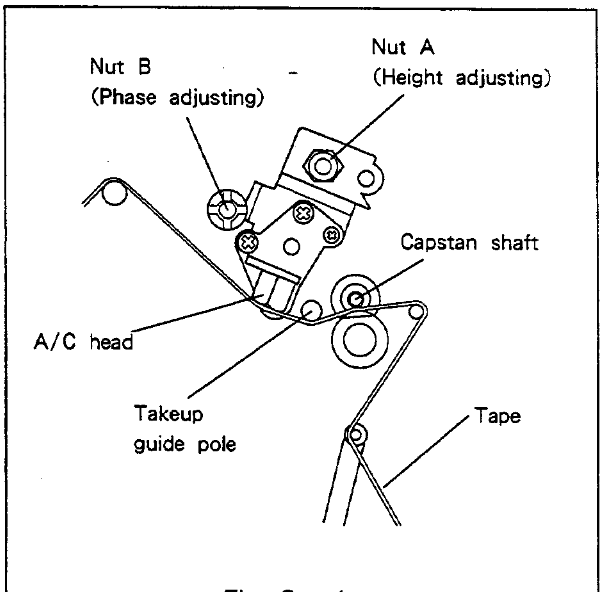


Fig. 3 – 4 F0D062

### 3-4 Phase Adjustment (Refer to Fig. 3-4.)

A. Set the VCR to the playback mode.

B. Preset tracking.

C. Turn the phase adjusting nuts to make the amplitude of the FM waveform maximum.
**Note** :
Do not turn the phase adjusting nut exceeding one turn in either direction.

D. Turn the A/C head counterclockwise and return to make sure that the amplitude of the FM waveform is the same as that before turning the head.

E. If the amplitude changes, check the A/C arm shaft if loose. If not free, replace the A/C arm and adjust the A/C head as in 3-3 and the phase as in this section from beginning.

F. Load and unload the tape several times to make certain that the amplitude of the FM waveform does not change.

### 3-5 Adjustment of Takeup Guide Arm Height (Refer to Fig. 3-5.)

A. Run a final portion of E-240 blank tape in the reverse search mode.

B. Adjust the height of the takeup guide pole by turning the height adjusting nut so that the tape shall not be creased at the upper and the lower flange portion of the take up guide pole.
**Note** :
Set the adjusting nut in the screwing-in direction.
Do not turn the nut exceeding one turn in either direction.

C. Eject the cassette tape and set to the reverse search mode again to make certain that the tape is not creased at the upper and the lower flange portion of the takeup guide pole.

D. Set to the playback mode and be sure that the tape is not creased at the upper and the lower flange portion of the takeup guide pole.

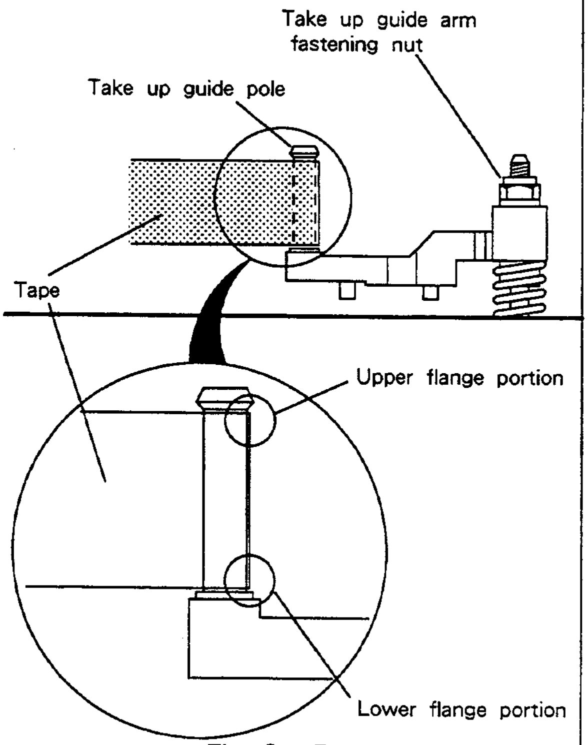


Fig. 3 – 5 F0D063

# KEY TO ABBREVIATIONS

**A/C** : Audio/Control
**ACC** : Automatic Colour Control
**A.E** : Audio Erase
**AFC** : Automatic Frequency Control
**AFT-D** : Automatic Fine Tuning Door Switch
**AGC** : Automatic Gain Control
**AL** : After Loading
**AMP** : Amplifier
**ANT** : Antenna
**A-PB** : Audio-Playback
**A-REC** : Audio-Recording
**ALC** : Automatic Level Control

**BPF** : Band-Pass Filter
**B/W** : Black and White
**BS** : Band SW

**CASS** : Cassette
**CP** : Capstan
**CP-FG** : Capstan-Frequency Generator
**CP-F/R** : Capstan-Forward/Reverse
**CP-M** : Capstan-Motor
**CONV** : Converter
**CTL** : Control
**C-LAMP** : Cassette Lamp
**C-I LAMP** : Cassette Indicator Lamp

**DAL** : Delay-After Loading
**DEMOD** : Demodulator
**DET** : Detector
**DL** : Delay Line
**DL-REV** : Delay Reverse
**DL-FWD** : Delay Forward
**DOC** : Drop Out Compensator

**EF** : Emitter Follower
**EMPHA** : Emphasis
**EQ** : Equalizer
**EE** : Electronic-Electronic
**ES** : End Sensor

**FE-H** : Full Erase Head
**FF** : Flip Flop or Fast Forward
**FG** : Frequency generator
**FL-SW** : Front Loading SW
**FLM** : Front Loading Motor
**F/R-SW** : FF/Rewind Switch

**G** : Ground

**HE-1** : Hall Element-1
**HE-2** : Hall Element-2
**H-LED** : Humidity-LED
**H-SENS** : Humidity-Sensor
**HPF** : High-Pass Filter

**LIM** : Limiter
**LPF** : Low-Pass Filter
**LM** : Loading Motor

**MDA** : Motor Drive Amplifier
**MC** : Mechanical Control
**MIC** : Microphone
**MOD** : Modulator

**OPE** : Operation
**OSC** : Oscillator

**PB** : Play Back
**PG** : Pulse Generator
**P/R-SW** : P.B/REC-SW
**PCB** : Printed Circuit Board
**PIC** : Picture Control

**REC** : Recording
**REF** : Reference
**RIS** : Record Inhibit Switch
**REW** : Rewind
**REG** : Regulator
**RS** : Reverse Search

**SENS** : Sensor
**SM** : Supply Motor
**S/P** : Still/Pause
**SS** : Speed Search
**STBY** : Stand By
**S & H** : Sample & Hold
**SYNC SEP** : Sync Separator

**TM** : Take up Motor
**T-REC** : Timer-Recording
**T.P** : Test Point
**TR** : Transistor
**TU-P** : Tuner-Power

**UL** : Unloading

**VS** : Voltage Synthesizer
**V.SYNC** : Vertical Sync
**VCO** : Voltage Controlled Oscillator
**VXO** : Variable Crystal Oscillator

**W/D** : White/Dark

**X'OSC** : Crystal Oscillator

**Y/C** : Luminance/Chrominance

# SURFACE MOUNT PARTS REPLACEMENT

## SURFACE MOUNT PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts which are used for certain circuit elements. When replacing these parts, note the cautions as follows.

**Cautions:**

A. Use fine tipped, well insulated soldering pencil (iron) about 30 watts and the tweezers.
B. Melting the solder, remove the Chip Parts carefully not to tear off the copper foil of the printed circuit board.
C. Discard removed chips; do not reuse them.
D. Do not apply heat for more than 3 seconds to the new chip Parts.
E. Avoid using a rubbing stroke when soldering.
F. Take care not to scratch when soldering, or damage the Chip Parts.
G. Supplementary cementing is not required.

### 1 Removal of chip Parts (Resistors, capacitors, etc.)

A. Grasp the part with tweezers. Melting the solder at both side alternately, remove the one side of the part with a twisting motion.
B. Melt the solder at the other side and remove the part.

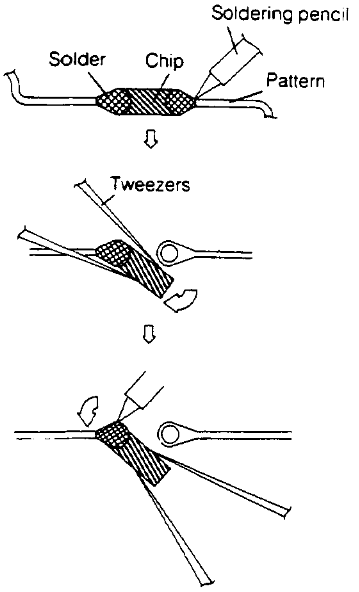

Soldering pencil
Solder
Chip
Pattern
Tweezers

Fig. 1

### 2 Removal of Chip Parts (Transistors)

A. Melting the solder of one lead, Lift the side of that lead upward.
B. Simultaneously melt the solder of the two remaining leads and lift the part to remove.

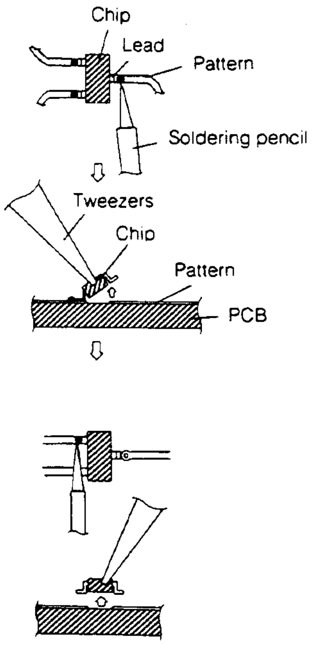

Chip
Lead
Pattern
Soldering pencil
Tweezers
Chip
Pattern
PCB

Fig. 2

### 3 Replacement

A. Presolder the contact points of the circuit pattern.
B. Press the part downward with tweezers and apply the soldering pencil as shown in the figure.

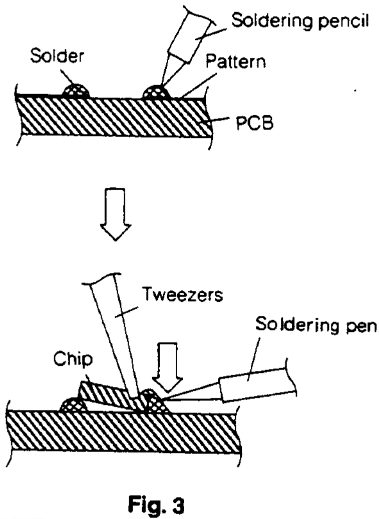
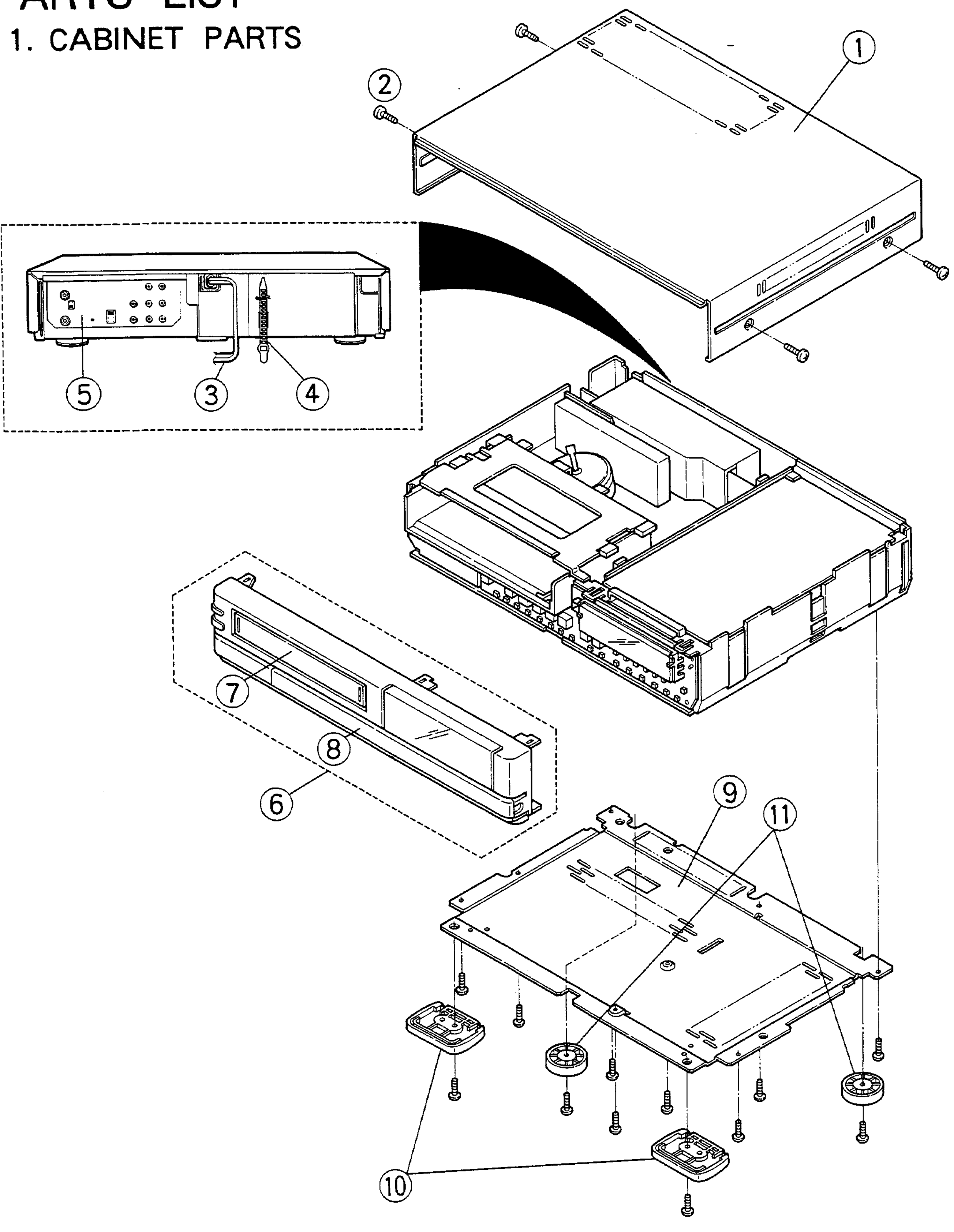

Soldering pencil
Solder
Pattern
PCB
Tweezers
Soldering pencil
Chip

Fig. 3

# MEMO

# PARTS LIST

## 1. CABINET PARTS


①
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⑧
⑨
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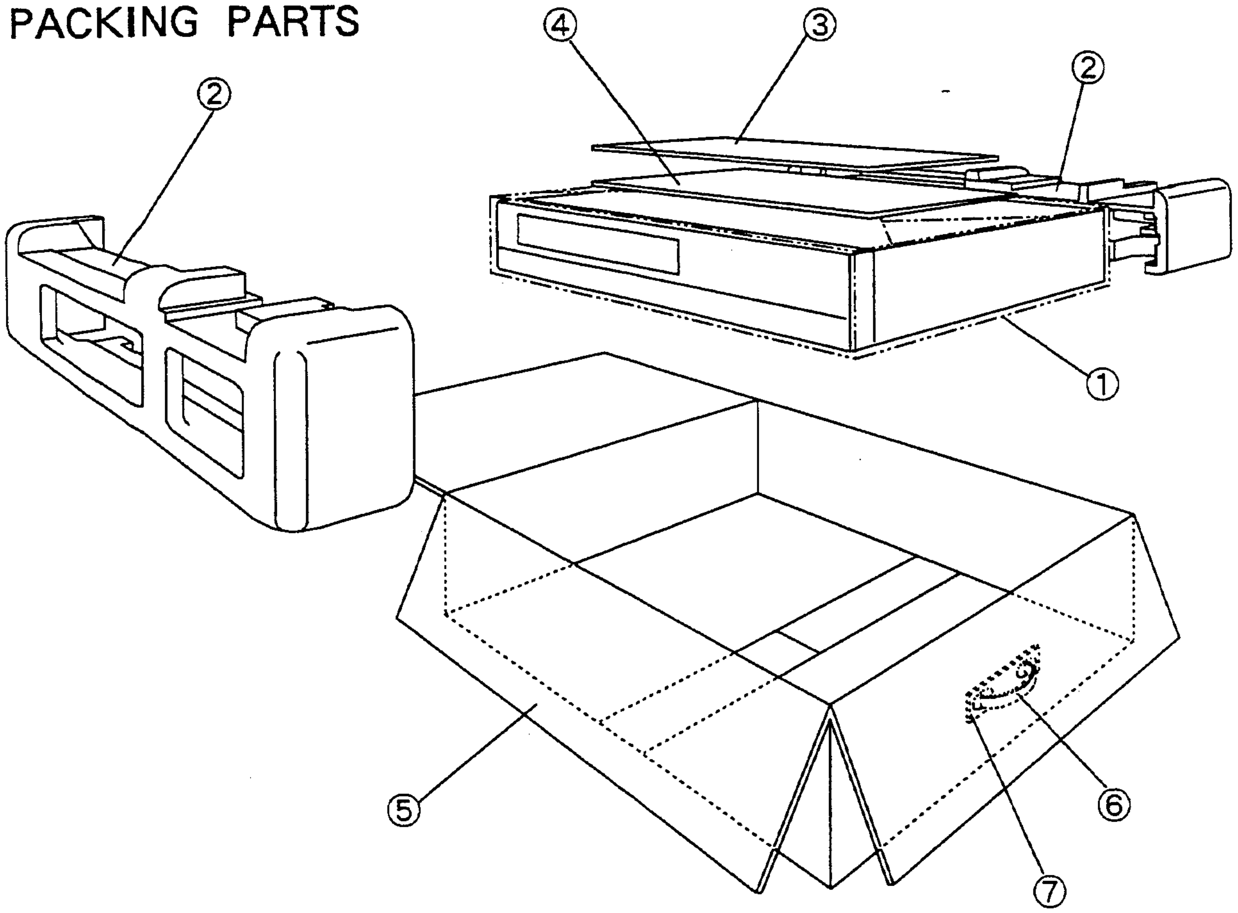
⑪

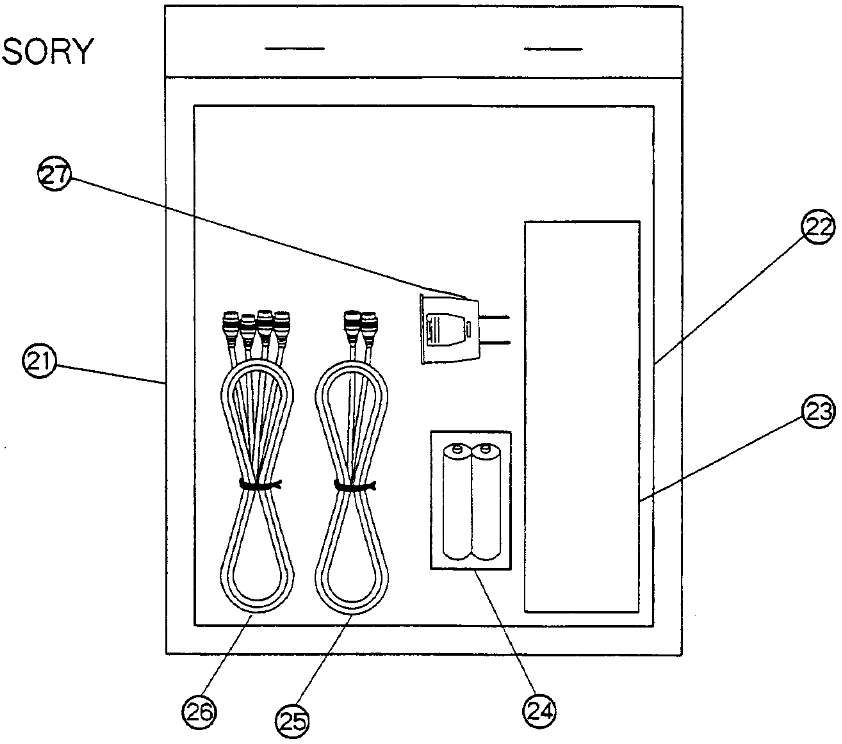
NOTE :
Broken AC power cord must be exchanged with a new original cord.

| ITEM NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| | | CABINET ASSEMBLY | |
| 1 | 968C020040 | TOP COVER ASSY | |
| 2 | 669D223080 | SCREW (10P) | |
| 3 | 246C149010 | AC POWER CORD | |
| 4 | 621C027010 | CORD BAND | |
| 5 | 761B223020 | ANTENNA COVER | [MS5] |
| 5 | 761B223010 | ANTENNA COVER | [MS7] |
| 6 | 701B213090 | FRONT UNIT | [MS5] |
| 6 | 701B213080 | FRONT UNIT | [MS7] |
| 7 | 702B731060 | CASSETTE DOOR | |
| 8 | 702C897090 | DOOR PANEL | [MS5] |
| 8 | 702C897080 | DOOR PANEL | [MS7] |
| 9 | 590A267010 | BOTTOM PANEL | |
| 10 | 771C101010 | INSULATOR-F | |
| 11 | 771C086020 | INSULATOR-R | |

## 2. PACKING PARTS



ACCESSORY



| ITEM NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| | | PACKING PARTS | |
| 1 | 831D190030 | PACKING SHEET | |
| 2 | 803A226010 | PACKING CUSHION | |
| 3 | ---------- | ACCESSORY-A | |
| 4 | ---------- | ACCESSORY-B | |
| 5 | 801C059060 | PACKING CASE | [MS5] |
| 5 | 801C059050 | PACKING CASE | [MS7] |
| 6 | 829D094020 | QUICK HAND | |
| 7 | 829D129010 | STOPPER | |
| | 831D198020 | PACKING BAG (FOR AC POWER CORD) | |
| | | ACCESSORY – A | |
| | 872C050050 | INSTRUCTION BOOK | [MS5] |
| | 872C050040 | INSTRUCTION BOOK | [MS7] |
| | 851B545010 | SHEET CAUTION DEW | |
| | | ACCESSORY – B | |
| 21 | 831D181020 | PACKING BAG | |
| 22 | 829C054070 | PACKING SHEET | |
| 23 | 939P447010 | REMOTE HAND UNIT | [MS5] |
| 23 | 939P447020 | REMOTE HAND UNIT | [MS7] |
| 24 | ---------- | BATTERY | |
| 25 | 242D231030 | CABLE (1.5M) | |
| 26 | 242C938010 | CABLE (2P) | [MS7] |
| 27 | 451C072010 | JACK AC | |

# 3. ELECTRICAL PARTS

## INTEGRATED CIRCUITS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| IC 311 | 272P400010 | IC | NJM2233BL | [MS5] |
| IC101 | 266P192010 | IC | LA7910 | |
| IC102 | 272P270010 | IC | LA7212 | |
| IC201 | 272P221020 | IC | XRA7254S | |
| IC2A0 | 272P232020 | IC | BA7255BS | |
| IC2A1 | 272P265010 | IC | BA7021 | |
| IC2A2 | 272P390010 | IC | BA7604 | |
| IC2A3 | 272P402010 | IC | NJM2243L | |
| IC2H0 | 272P274010 | IC | TL8709P | |
| IC2J0 | 272P565020 | IC | TL8812P | |
| IC2X1 | 272P325020 | IC | NJM2235S | |
| IC310 | 272P234010 | IC | LA7295 | |
| IC3A0 | 272P378020 | IC | BA7740S | [MS7] |
| IC3301 | 272P390010 | IC | BA7604 | [MS7] |
| IC3304 | 272P488010 | IC | BA7703K1 | [MS7] |
| IC4A0 | 263P415050 | IC | MN67492MSG3 | |
| IC4A1 | 272P237010 | IC | LA6324N | |
| IC4A2 | 272P235010 | IC | TA7291S | |
| IC501 | 263P610010 | IC | M50455-090SP | |
| IC5A0 | 263P562020 | IC | M37420M6-475SP | |
| IC5A1 | 263P030020 | IC | TC4030BP | |
| IC5Z0 | 274P005010 | IC | M34225M2-125SP | |
| IC5Z1 | 266P419010 | IC | M5223P | [MS7] |
| IC6A0 | 272P271030 | IC | LA7333 | |
| IC6A1 | 272P233030 | IC | LA7312A | |
| IC6A2 | 272P316020 | IC | BA7107F | [MS7] |
| IC6A3 | 272P277010 | IC | BA7025L | |
| IC6A4 | 272P494010 | IC | M52063SP | |
| IC6A8 | 263P653030 | IC | MC14053BF | |
| IC6A9 | 263P653030 | IC | MC14053BF | |
| IC8A0 | 263P559010 | IC | μPD75217GF-563-3BE | |
| IC8A1 | 263P170020 | IC | CAT35C102P/S-292 | |
| IC8A2 | 266P010020 | IC | μPC574J-K | |
| IC901 | 267P107010 | IC | STR- D6009E | |
| IC902 | 267P062040 | IC | SE012N | |
| IC903 | 267P076010 | IC | SI-3120C | |
| IC904 | 267P076050 | IC | SI-3050CA | |

## TRANSISTORS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| | 268P045010 | PHOTO INTERRUPTER | GP1L52 | [MS5] |
| Q 01 | 260P804020 | CHIP TRANSISTOR | 2SC3052-F | |
| Q 02 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 101 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 102 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 201 | 260P356010 | TRANSISTOR | 2SC1906 | [MS7] |
| Q 208 | 260P817030 | CHIP TRANSISTOR | 2SA1037K | |
| Q 210 | 260P807010 | CHIP TRANSISTOR | DTC124K | [MS7] |
| Q 2A0 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 2A1 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 2A2 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2A3 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2A4 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2A5 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2A6 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 2A7 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2A8 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 2A9 | 260P562040 | TRANSISTOR | 2SA952-K | |
| Q 2B0 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2B1 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2B2 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2B3 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2B4 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 2B5 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 2B6 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 2B7 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2B8 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2B9 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2C0 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2C1 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2C5 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2C7 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2D1 | 260P559050 | TRANSISTOR | 2SC1740S-E | |
| Q 2J0 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2J1 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2J2 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 2J3 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2J4 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2J5 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2J6 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2J7 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2J8 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 2N1 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 2N2 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 310 | 260P629060 | TRANSISTOR | 2SC3331-S, T, U | |
| Q 311 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 3A0 | 260P817030 | CHIP TRANSISTOR | 2SA1037K | [MS7] |
| Q 3301 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | [MS7] |
| Q 3302 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | [MS7] |
| Q 3303 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | [MS7] |
| Q 3304 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | [MS7] |
| Q 3305 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | [MS7] |
| Q 3307 | 260P632010 | TRANSISTOR | DTC124ES | [MS7] |
| Q 3308 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | [MS7] |
| Q 3309 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | [MS7] |
| Q 3310 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | [MS7] |
| Q 3311 | 260P632010 | TRANSISTOR | DTC124ES | [MS7] |
| Q 3312 | 260P632010 | TRANSISTOR | DTC124ES | [MS7] |
| Q 3313 | 260P632010 | TRANSISTOR | DTC124ES | [MS7] |
| Q 3314 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | [MS7] |
| Q 3315 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | [MS7] |
| Q 3405 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | [MS7] |
| Q 3406 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | [MS7] |
| Q 3409 | 260P632010 | TRANSISTOR | DTC124ES | [MS7] |
| Q 4A0 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 4A2 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 4A3 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | |
| Q 4A4 | 260P560040 | TRANSISTOR | 2SA933S-S | |
| Q 4A5 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 4A7 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| Q 4A8 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 501 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 502 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 503 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 504 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | |
| Q 506 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 507 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 508 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 509 | 260P559030 | TRANSISTOR | 2SC1740S | |
| Q 510 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 511 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 512 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 513 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | |
| Q 514 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | |
| Q 571 | 268P014020 | PHOTO TRANSISTOR | PN205L-(NC) | |
| Q 572 | 268P014020 | PHOTO TRANSISTOR | PN205L-(NC) | |
| Q 573 | 268P044010 | PHOTO INTERRUPTER | ON2270-R | |
| Q 574 | 268P044010 | PHOTO INTERRUPTER | ON2270-R | |
| Q 575 | 268D013010 | PHOTO INTERRUPTER | | |
| Q 5A1 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5A2 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5A3 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 5A4 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 5A5 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 5A7 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | |
| Q 5A8 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5B4 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 5B5 | 260P559040 | TRANSISTOR | 2SC1740S-R, S | |
| Q 5C0 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 5C1 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 5C2 | 260P419030 | TRANSISTOR | 2SC2724-D | |
| Q 5C3 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5C4 | 260P356010 | TRANSISTOR | 2SC1906 | |
| Q 5C5 | 260P419030 | TRANSISTOR | 2SC2724-D | |
| Q 5C6 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5D1 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 5D2 | 260P632010 | TRANSISTOR | DTC124ES | [MS7] |
| Q 5D3 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5D4 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5D5 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 5D6 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 5D7 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 5H2 | 260P632010 | TRANSISTOR | DTC124ES | |
| Q 5P0 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 5P1 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 6A0 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 6A2 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 6A3 | 260P807010 | CHIP TRANSISTOR | DTC124K | |
| Q 6A5 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 6A6 | 260P806010 | CHIP TRANSISTOR | DTA124EK | |
| Q 6A7 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6A8 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6A9 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6B0 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6B1 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| Q 6B2 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6B3 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6B4 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | |
| Q 6B5 | 260P356010 | TRANSISTOR | 2SC1906 | |
| Q 6B6 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | [MS7] |
| Q 6B7 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 6B8 | 260P562040 | TRANSISTOR | 2SA952-K | [MS7] |
| Q 6B9 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | [MS7] |
| Q 6C0 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | |
| Q 6C1 | 260P807010 | CHIP TRANSISTOR | DTC124K | [MS7] |
| Q 6C2 | 260P802020 | CHIP TRANSISTOR | 2SA 1235-F | [MS7] |
| Q 6C5 | 260P805030 | CHIP TRANSISTOR | 2SC3053-D | [MS7] |
| Q 8A5 | 260P560010 | TRANSISTOR | 2SA933S-R, S | |
| Q 8A8 | 260P559060 | TRANSISTOR | 2SC1740S-S, E | |
| Q 8M0 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | [MS7] |
| Q 8M1 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 8M2 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 8M3 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 8M4 | 260P603010 | TRANSISTOR | DTA124ES/UN4112 | |
| Q 901 | 260P613010 | TRANSISTOR | 2SC4208A | |
| Q 904 | 260P613010 | TRANSISTOR | 2SC4208A | |
| Q 905 | 260P630010 | TRANSISTOR | 2SD2012 | |
| Q 971 | 260P630010 | TRANSISTOR | 2SD2012 | |

## DIODES

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| D 202 | 264P568010 | DIODE | 1SS252 | |
| D 2A0 | 264P568010 | DIODE | 1SS252 | |
| D 2A1 | 264P568010 | DIODE | 1SS252 | |
| D 2A2 | 264P568010 | DIODE | 1SS252 | |
| D 2A3 | 264P568010 | DIODE | 1SS252 | |
| D 2A4 | 264P568010 | DIODE | 1SS252 | |
| D 2A5 | 264P568010 | DIODE | 1SS252 | |
| D 2A6 | 264P568010 | DIODE | 1SS252 | |
| D 2A7 | 264P568010 | DIODE | 1SS252 | |
| D 2A8 | 264P568010 | DIODE | 1SS252 | |
| D 2A9 | 264P568010 | DIODE | 1SS252 | |
| D 2B0 | 264P568010 | DIODE | 1SS252 | |
| D 2B1 | 264P568010 | DIODE | 1SS252 | |
| D 2B2 | 264P568010 | DIODE | 1SS252 | |
| D 2B3 | 264P568010 | DIODE | 1SS252 | |
| D 2B4 | 264P568010 | DIODE | 1SS252 | |
| D 2N1 | 264P568010 | DIODE | 1SS252 | |
| D 2N2 | 264P568010 | DIODE | 1SS252 | |
| D 3301 | 264P341020 | DIODE | HZ11A1 | [MS7] |
| D 3305 | 264P568010 | DIODE | 1SS252 | [MS7] |
| D 4A0 | 264P568010 | DIODE | 1SS252 | |
| D 4A6 | 264P568010 | DIODE | 1SS252 | |
| D 501 | 264P568010 | DIODE | 1SS252 | |
| D 502 | 264P568010 | DIODE | 1SS252 | |
| D 503 | 264P568010 | DIODE | 1SS252 | |
| D 570 | 264P307020 | LIGHT EMITTING DIODE | GL-451 | |
| D 571 | 264P515010 | DIODE | MA165 | |
| D 5A0 | 264P568010 | DIODE | 1SS252 | |
| D 5A2 | 264P342070 | DIODE | HZ4C2 | |
| D 5A3 | 264P568010 | DIODE | 1SS252 | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| D 5A4 | 264P568010 | DIODE | 1SS252 | |
| D 5A5 | 264P568010 | DIODE | 1SS252 | |
| D 5B4 | 264P568010 | DIODE | 1SS252 | |
| D 5B9 | 264P342080 | DIODE | HZ6B1 | |
| D 5C0 | 264P568010 | DIODE | 1SS252 | |
| D 5C1 | 264P568010 | DIODE | 1SS252 | |
| D 5C5 | 264P568010 | DIODE | 1SS252 | |
| D 5C9 | 264P568010 | DIODE | 1SS252 | |
| D 5D2 | 264P568010 | DIODE | 1SS252 | |
| D 5P0 | 264P568010 | DIODE | 1SS252 | |
| D 5P1 | 264P568010 | DIODE | 1SS252 | |
| D 5Z0 | 264P568010 | DIODE | 1SS252 | [MS7] |
| D 5Z1 | 264P568010 | DIODE | 1SS252 | [MS7] |
| D 5Z2 | 264P568010 | DIODE | 1SS252 | [MS7] |
| D 5Z3 | 264P568010 | DIODE | 1SS252 | [MS7] |
| D 6A1 | 264P568010 | DIODE | 1SS252 | |
| D 6A2 | 264P568010 | DIODE | 1SS252 | |
| D 6A3 | 264P568010 | DIODE | 1SS252 | |
| D 6A4 | 264P568010 | DIODE | 1SS252 | |
| D 6A5 | 264P568010 | DIODE | 1SS252 | |
| D 6A6 | 264P568010 | DIODE | 1SS252 | |
| D 6A7 | 264P568010 | DIODE | 1SS252 | [MS7] |
| D 701 | 264P572010 | LIGHT EMITTING DIODE | SEL 2210R | |
| D 8A0 | 264P568010 | DIODE | 1SS252 | |
| D 8A1 | 264P568010 | DIODE | 1SS252 | |
| D 8A2 | 264P568010 | DIODE | 1SS252 | |
| D 8A3 | 264P568010 | DIODE | 1SS252 | |
| D 8A4 | 264P568010 | DIODE | 1SS252 | |
| D 8A5 | 264P568010 | DIODE | 1SS252 | |
| D 8A6 | 264P568010 | DIODE | 1SS252 | |
| D 8A7 | 264P568010 | DIODE | 1SS252 | |
| D 8A8 | 264P568010 | DIODE | 1SS252 | |
| D 8A9 | 264P568010 | DIODE | 1SS252 | |
| D 8B0 | 264P568010 | DIODE | 1SS252 | |
| D 8B1 | 264P568010 | DIODE | 1SS252 | |
| D 8B2 | 264P568010 | DIODE | 1SS252 | |
| D 8B3 | 264P568010 | DIODE | 1SS252 | |
| D 8B9 | 264P568010 | DIODE | 1SS252 | |
| D 8C9 | 264P568010 | DIODE | 1SS252 | |
| D 8J2 | 264P568010 | DIODE | 1SS252 | |
| D 8J3 | 264P568010 | DIODE | 1SS252 | |
| D 8J4 | 264P568010 | DIODE | 1SS252 | [MS5] |
| D 8M0 | 264P313060 | LIGHT EMITTING DIODE | SLR-34DC3 | [MS7] |
| D 8M1 | 264P313060 | LIGHT EMITTING DIODE | SLR-34DC3 | [MS5] |
| D 8M1 | 264P313040 | DIODE | SLR-34MC3 | [MS7] |
| D 8M2 | 264P313040 | DIODE | SLR-34MC3 | |
| D 8M3 | 264P313050 | DIODE | SLR-34URC3 | |
| D 8M4 | 264P313050 | DIODE | SLR-34URC3 | |
| D 8Z0 | 264P501040 | DIODE | HZ3ALL | |
| D 8Z1 | 264P459030 | DIODE | RD4. 7EB1 | |
| D 8Z2 | 264P193080 | DIODE | MZ309B2/HZ9B24 | |
| D 901 | 264P598010 | DIODE | LB-156 | |
| D 902 | 264P543030 | DIODE | EG01C | |
| D 903 | 264P600010 | DIODE | EH1 | |
| D 904 | 264P457050 | DIODE | RD3. 0EB1 | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| D 905 | 264P521040 | DIODE | EU 1A | |
| D 906 | 264P521040 | DIODE | EU 1A | |
| D 907 | 264P521040 | DIODE | EU 1A | |
| D 908 | 264P358070 | DIODE | RU 4AM | |
| D 909 | 264P358070 | DIODE | RU 4AM | |
| D 910 | 264P521040 | DIODE | EU 1A | |
| D 911 | 264P521040 | DIODE | EU 1A | |
| D 912 | 264P599010 | DIODE | EK04 | |
| D 915 | 264P465060 | DIODE | EQA02-12B | |
| D 916 | 264P464040 | DIODE | EQA02-10B | |

## FILTERS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| BF3301 | 409P371010 | BAND PASS FILTER | | [MS7] |
| BF3302 | 409P356010 | BAND PASS FILTER | | [MS7] |
| BPF6A0 | 409P541010 | BAND PASS FILTER | | |
| BPF6A1 | 409P540010 | BAND PASS FILTER | | |
| BPF6A2 | 409P370010 | BAND PASS FILTER | SBP-4029 | |
| BPF6A3 | 409P421010 | BAND PASS FILTER | MYV-30M | |
| BPF6A4 | 409P302010 | BAND PASS FILTER | | [MS7] |
| BPF6A5 | 409P302010 | BAND PASS FILTER | | [MS7] |
| CF101 | 299P034030 | CERAMIC RESONATOR | | |
| CF5A0 | 299P118020 | CERAMIC RESONATOR | CST8. 00MT | |
| CF5Z0 | 299P116010 | CERAMIC RESONATOR | KBR-4. 0MES | |
| CF6A0 | 296P098010 | CERAMIC FILTER | | |
| DL6A1 | 337P160010 | COMB FILTER | EFD-VR645A45H | |
| LPF2A0 | 409P633010 | LOW PASS FILTER | | |
| LPF2A1 | 409P435010 | LOW PASS FILTER | SEL 4214 | |
| LPF6A0 | 409P543010 | LOW PASS FILTER | | |
| LPF6A1 | 409P438010 | LOW PASS FILTER | MYV-2A6 | |
| LPF6A2 | 409P643010 | LOW PASS FILTER | | [MS7] |

## DELAY LINES

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| DL2A0 | 409P586010 | DELAY EQUALIZER | MZV-56VP | |
| DL6A0 | 337P063010 | DELAY LINE | | |
| DL6A2 | 337P155010 | DELAY LINE | | |

## COILS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| EQ6A0 | 332P009010 | COIL | BELL 1. 1MHz | [MS7] |
| EQ6A1 | 332P009010 | COIL | BELL 1. 1MHz | [MS7] |
| EQ6A2 | 409P632010 | COIL | | [MS7] |
| L 101 | 325C111030 | PEAKING COIL | 10 μ H-K | |
| L 102 | 321C132030 | RF COIL | 100MHz+-7. 5% | |
| L 103 | 321C010010 | RF COIL | 100 μ H-K | |
| L 201 | 325C122050 | PEAKING COIL | 100 μ H-K | |
| L 206 | 325C166070 | PEAKING COIL | 22 μ H-J | |
| L 210 | 325C166070 | PEAKING COIL | 22 μ H-J | |
| L 211 | 325C166000 | PEAKING COIL | 5. 6 μ H-J | |
| L 212 | 325C121000 | PEAKING COIL | 5. 6 μ H-K | |
| L 213 | 325C122050 | PEAKING COIL | 100 μ H-K | |
| L 219 | 325C167040 | PEAKING COIL | 82 μ H-J | |
| L 220 | 325C167070 | PEAKING COIL | 150 μ H-J | |
| L 2A0 | 325C102050 | PEAKING COIL | 100 μ H-K | |
| L 2A1 | 325C167060 | PEAKING COIL | 120 μ H-J | |
| L 2A3 | 325C166050 | PEAKING COIL | 15 μ H-J | |
| L 2A4 | 325C167030 | PEAKING COIL | 68 μ H-J | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| L 2A5 | 325C167080 | PEAKING COIL | 180 μH-J | |
| L 2A8 | 325C122050 | PEAKING COIL | 100 μH-K | |
| L 2A9 | 325C167010 | PEAKING COIL | 47 μH-J | |
| L 2B0 | 325C122050 | PEAKING COIL | 100 μH-K | |
| L 2B1 | 325C122050 | PEAKING COIL | 100 μH-K | |
| L 2H0 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 2H1 | 325C166090 | PEAKING COIL | 33 μH-J | |
| L 2H2 | 325C166090 | PEAKING COIL | 33 μH-J | |
| L 2J0 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 2J1 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 2J2 | 325C166090 | PEAKING COIL | 33 μH-J | |
| L 2J3 | 325C166050 | PEAKING COIL | 15 μH-J | |
| L 2J4 | 325C166090 | PEAKING COIL | 33 μH-J | |
| L 2J5 | 325C167010 | PEAKING COIL | 47 μH-J | |
| L 2J6 | 325C167020 | PEAKING COIL | 56 μH-J | |
| L 2J7 | 325C166080 | PEAKING COIL | 27 μH-J | |
| L 2J8 | 325C122050 | PEAKING COIL | 100 μH-K | |
| L 2J9 | 325C167030 | PEAKING COIL | 68 μH-J | |
| L 2K0 | 325C166030 | PEAKING COIL | 10 μH-J | |
| L 2X0 | 325C166030 | PEAKING COIL | 10 μH-J | |
| L 2Y1 | 325C166030 | PEAKING COIL | 10 μH-J | |
| L 310 | 321C010040 | RF COIL | 1000 μH-J | |
| L 311 | 321C015050 | RF COIL | 8200 μH-J | |
| L 312 | 321C114080 | RF COIL | 8200 μH-J | |
| L 3A0 | 325C262050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 3302 | 325C262050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 3303 | 325C262050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 3304 | 325C262050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 3317 | 325C262050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 3319 | 325C262050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 3320 | 325C162010 | PEAKING COIL | 47 μH-K | [MS7] |
| L 3324 | 325C162010 | PEAKING COIL | 47 μH-K | [MS7] |
| L 501 | 325C262050 | PEAKING COIL | 100 μH-K | |
| L 502 | 325C266050 | PEAKING COIL | 15 μH-J | |
| L 503 | 325C262050 | PEAKING COIL | 100 μH-K | |
| L 507 | 325C266030 | PEAKING COIL | 10 μH-J SO | |
| L 570 | 299P124010 | LATCH MAGNET | | |
| L 5A0 | 325C262050 | PEAKING COIL | 100 μH-K | |
| L 5A2 | 325C266070 | PEAKING COIL | 22 μH-J SO | |
| L 5A4 | 325C124080 | PEAKING COIL | 0.56 μH-M | |
| L 5A5 | 325C124050 | PEAKING COIL | 0.33 μH-M | |
| L 5A6 | 325C124050 | PEAKING COIL | 0.33 μH-M | |
| L 5Z0 | 325C261030 | PEAKING COIL | 10 μH-K | |
| L 6A0 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 6A1 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 6A2 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 6A3 | 325C162050 | PEAKING COIL | 100 μH-K | [MS7] |
| L 6A5 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 6A6 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 6A7 | 325C165070 | PEAKING COIL | 3.3 μH-J | |
| L 6A8 | 325C166060 | PEAKING COIL | 18 μH-J | |
| L 6A9 | 325C166050 | PEAKING COIL | 15 μH-J | |
| L 6B0 | 325C166050 | PEAKING COIL | 15 μH-J | |
| L 6B1 | 325C166050 | PEAKING COIL | 15 μH-J | |
| L 6B2 | 325C167000 | PEAKING COIL | 39 μH-J | |
| L 6B3 | 325C168010 | PEAKING COIL | 330 μH-J | |
| L 6B4 | 325C167010 | PEAKING COIL | 47 μH-J | |
| L 6B5 | 325C167000 | PEAKING COIL | 39 μH-J | [MS7] |
| L 6B6 | 325C167090 | PEAKING COIL | 220 μH-J | [MS7] |
| L 6B7 | 325C167090 | PEAKING COIL | 220 μH-J | [MS7] |
| L 6B8 | 325C166090 | PEAKING COIL | 33 μH-J | [MS7] |
| L 6C0 | 325C167030 | PEAKING COIL | 68 μH-J | |
| L 6C1 | 325C162050 | PEAKING COIL | 100 μH-K | |
| L 901 | 351P038010 | LINE FILTER | | |
| T 6A0 | 332P007010 | H-OSCILLATOR | | |

## TRANSFORMERS

| | | | |
|---|---|---|---|
| T 310 | 409P423010 | AUDIO BIAS OSC | 705720044D |
| T 901 | 350P531020 | POWER | |

## VARIABLE RESISTORS

| | | | | |
|---|---|---|---|---|
| VR203 | 127C290080 | VR-SEMIFIXED | 1/10W B10kΩ-N | |
| VR280 | 120C381040 | VR-PCB | 1/20W B20kΩ-20TM CS | |
| VR2A0 | 127C080070 | VR-SEMIFIXED | 1/5W B5kΩ-M | |
| VR2A1 | 127C080080 | VR-SEMIFIXED | 1/5W B10kΩ-M | |
| VR2A2 | 127C090090 | VR-SEMIFIXED | 1/5W B20kΩ-M | |
| VR2A3 | 127C081020 | VR-SEMIFIXED | 1/5W B100kΩ-M | |
| VR2A4 | 127C081020 | VR-SEMIFIXED | 1/5W B100kΩ-M | |
| VR2A5 | 127C080070 | VR-SEMIFIXED | 1/5W B5kΩ-M | |
| VR2F0 | 127C080070 | VR-SEMIFIXED | 1/5W B5kΩ-M | |
| VR2J0 | 127C280070 | VR SEMIFIXED | 1/10W B5kΩ-N | |
| VR310 | 127C081020 | VR-SEMIFIXED | 1/5W B100kΩ-M | |
| VR311 | 127C080080 | VR-SEMIFIXED | 1/5W B10kΩ-M | [MS5] |
| VR3A0 | 127C290070 | VR-SEMIFIXED | 1/10W B5kΩ-N | [MS7] |
| VR3301 | 127C090080 | VR-SEMIFIXED | 1/5W B10kΩ-M | [MS7] |
| VR3302 | 127C090080 | VR-SEMIFIXED | 1/5W B10kΩ-M | [MS7] |
| VR3305 | 127C080090 | VR-SEMIFIXED | 1/5W B20kΩ-M | [MS7] |
| VR3306 | 127C080090 | VR-SEMIFIXED | 1/5W B20kΩ-M | [MS7] |
| VR3309 | 127C180050 | VR-SEMIFIXED | 1/5W B2kΩ-M | [MS7] |
| VR3311 | 127C091030 | VR-SEMIFIXED | 1/5W B200kΩ-M | [MS7] |
| VR3312 | 127C091030 | VR-SEMIFIXED | 1/5W B200kΩ-M | [MS7] |
| VR4A0 | 127C181020 | VR-SEMIFIXED | 1/5W B100kΩ-M | |
| VR580 | 120C381090 | VR-PCB | 1/20W B100kΩ-20TM | |
| VR6A0 | 127C280040 | VR-SEMIFIXED | 1/10W B1kΩ-N | |
| VR6A1 | 127C280040 | VR-SEMIFIXED | 1/10W B1kΩ-N | |
| VR6A3 | 127C090080 | VR-SEMIFIXED | 1/5W B10kΩ-M | |
| VR6A4 | 127C281020 | VR SEMIFIXED | 1/10W B100kΩ-N | [MS7] |
| VR6A5 | 127C281020 | VR SEMIFIXED | 1/10W B100kΩ-N | [MS7] |
| VR6A6 | 127C280040 | VR-SEMIFIXED | 1/10W B1kΩ-N | [MS7] |
| VR6A7 | 127C280040 | VR-SEMIFIXED | 1/10W B1kΩ-N | [MS7] |

## RESISTORS

| | | | |
|---|---|---|---|
| R 01 | 103P404080 | CHIP RESISTOR | 1/10W 82kΩ-J |
| R 02 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 03 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 04 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 05 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 06 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 119 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 120 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| R 121 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H |
| R 122 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H |
| R 124 | 103P401060 | CHIP RESISTOR | 1/10W 180Ω-J |
| R 125 | 103P401050 | CHIP RESISTOR | 1/10W 150Ω-J |
| R 127 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 128 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 129 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 130 | 103P405060 | CHIP RESISTOR | 1/10W 390kΩ-J |
| R 131 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 132 | 103P404080 | CHIP RESISTOR | 1/10W 82kΩ-J |
| R 133 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 134 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 135 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 136 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 137 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 138 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 140 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J |
| R 201 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 202 | 103P401090 | CHIP RESISTOR | 1/10W 330Ω-J |
| R 206 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 208 | 103P402000 | CHIP RESISTOR | 1/10W 390Ω-JX10/05K |
| R 209 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 210 | 103P401020 | CHIP RESISTOR | 1/10W 82Ω-J |
| R 212 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |
| R 214 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 219 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 227 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 242 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J [MS7] |
| R 283 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J |
| R 284 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 286 | 103P405000 | CHIP RESISTOR | 1/10W 120kΩ-J |
| R 287 | 103P401090 | CHIP RESISTOR | 1/10W 330Ω-J |
| R 290 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| R 2A0 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 2A1 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2A2 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2A3 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2A4 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 2A5 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 2A6 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2A7 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J |
| R 2A8 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 2A9 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 2B0 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 2B1 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2B2 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2B3 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 2B4 | 103P406000 | CHIP RESISTOR | 1/10W 820kΩ-J |
| R 2B5 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 2B6 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 2B7 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 2B8 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2B9 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 2C0 | 103P402000 | CHIP RESISTOR | 1/10W 390Ω-JX10/05K |
| R 2C1 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J |
| R 2C2 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 2C3 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2C4 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2C5 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 2C6 | 103P404040 | CHIP RESISTOR | 1/10W 39kΩ-J |
| R 2C7 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 2C8 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 2C9 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 2D0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2D1 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |
| R 2D3 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 2D4 | 103P405000 | CHIP RESISTOR | 1/10W 120kΩ-J |
| R 2D5 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H |
| R 2D8 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J |
| R 2D9 | 103P401010 | CHIP RESISTOR | 1/10W 68Ω-J |
| R 2E0 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 2E2 | 103P401020 | CHIP RESISTOR | 1/10W 82Ω-J |
| R 2E3 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 2E4 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 2E5 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2E6 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 2E7 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J |
| R 2E8 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |
| R 2E9 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J |
| R 2F0 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 2F1 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 2F2 | 103P401060 | CHIP RESISTOR | 1/10W 180Ω-J |
| R 2F3 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J |
| R 2F4 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 2F6 | 103P404040 | CHIP RESISTOR | 1/10W 39kΩ-J |
| R 2F7 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2F8 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2F9 | 103P472050 | CHIP RESISTOR | 1/10W 1kΩ-F |
| R 2G0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2G1 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 2G2 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 2G3 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2G4 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 2G5 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2G7 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 2H0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2H1 | 103P401010 | CHIP RESISTOR | 1/10W 68Ω-J |
| R 2H2 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J |
| R 2H3 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J |
| R 2H4 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H |
| R 2J0 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 2J1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 2J2 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 2J3 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 2J4 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J |
| R 2J7 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 2J8 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2J9 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 2K0 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 2K1 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| R 2K2 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 2K3 | 103P401040 | CHIP RESISTOR | 1/10W 120Ω-J |
| R 2K5 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J |
| R 2K6 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2K7 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 2K8 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H |
| R 2K9 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J |
| R 2L1 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 2L2 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 2L3 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 2L4 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 2L5 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 2L6 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J |
| R 2L7 | 103P405010 | CHIP RESISTOR | 1/10W 150kΩ-J |
| R 2N1 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 2N2 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 2X0 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J |
| R 2X1 | 103P471080 | CHIP RESISTOR | 1/10W 510Ω-F |
| R 2X2 | 103P403040 | CHIP RESISTOR | 1/10W 5.6kΩ-J |
| R 2X3 | 103P405040 | CHIP RESISTOR | 1/10W 270kΩ-J |
| R 2X4 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J |
| R 310 | 103P400010 | CHIP RESISTOR | 1/10W 10Ω-J |
| R 311 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 312 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J [MS5] |
| R 312 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J [MS7] |
| R 313 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J [MS5] |
| R 313 | 103P470080 | CHIP RESISTOR | 1/10W 200Ω-F [MS7] |
| R 314 | 103P405050 | CHIP RESISTOR | 1/10W 330kΩ-J [MS5] |
| R 314 | 103P478050 | CHIP RESISTOR | 1/10W 330kΩ-F [MS7] |
| R 315 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J [MS5] |
| R 315 | 103P474010 | CHIP RESISTOR | 1/10W 4.7kΩ-F [MS7] |
| R 316 | 103P406010 | CHIP RESISTOR | 1/10W 1MΩ-J |
| R 317 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 318 | 103P403080 | CHIP RESISTOR | 1/10W 12kΩ-J |
| R 319 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J [MS5] |
| R 319 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J [MS7] |
| R 320 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J |
| R 321 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J [MS5] |
| R 322 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J [MS5] |
| R 323 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J [MS5] |
| R 324 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J [MS5] |
| R 324 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J [MS7] |
| R 325 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 326 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 327 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 328 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 329 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 330 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 331 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 332 | 103P403090 | CHIP RESISTOR | 1/10W 15kΩ-J |
| R 333 | 103P404070 | CHIP RESISTOR | 1/10W 68kΩ-J [MS5] |
| R 335 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 336 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J |
| R 337 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 3A0 | 103P400010 | CHIP RESISTOR | 1/10W 10Ω-J [MS7] |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| R 3A1 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J [MS7] |
| R 3A2 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J [MS7] |
| R 3A3 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J [MS7] |
| R 3A4 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J [MS7] |
| R 3A5 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H [MS7] |
| R 3A6 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J [MS7] |
| R 3A7 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J [MS7] |
| R 3A8 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J [MS7] |
| R 3B1 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J [MS7] |
| R 3B2 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J [MS7] |
| R 3B6 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6A0 | 103P405030 | CHIP RESISTOR | 1/10W 220kΩ-J |
| R 6A1 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 6A2 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 6A3 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 6A4 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6A5 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 6A6 | 103P404020 | CHIP RESISTOR | 1/10W 27kΩ-J |
| R 6A7 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 6A8 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6A9 | 103P401010 | CHIP RESISTOR | 1/10W 68Ω-J |
| R 6B0 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J |
| R 6B1 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 6B2 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 6B3 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 6B4 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 6B5 | 103P404040 | CHIP RESISTOR | 1/10W 39kΩ-J |
| R 6B6 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 6B7 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J |
| R 6B8 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6B9 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 6C0 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 6C1 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 6C2 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 6C3 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 6C4 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 6C5 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6C6 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 6C7 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J |
| R 6C8 | 103P402000 | CHIP RESISTOR | 1/10W 390Ω-JX10/05K |
| R 6C9 | 103P403020 | CHIP RESISTOR | 1/10W 3.9kΩ-H |
| R 6D0 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 6D1 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6D2 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6D3 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6D4 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 6D5 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 6D6 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 6D7 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6D8 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 6D9 | 103P405030 | CHIP RESISTOR | 1/10W 220kΩ-J |
| R 6E0 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J |
| R 6E1 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 6E2 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6E3 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| R 6E4 | 103P401080 | CHIP RESISTOR | 1/10W 270Ω-J |
| R 6E5 | 103P402060 | CHIP RESISTOR | 1/10W 1.2kΩ-J |
| R 6E6 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6E7 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6E8 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J |
| R 6E9 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J |
| R 6F0 | 103P402000 | CHIP RESISTOR | 1/10W 390Ω-JX10/05K |
| R 6F1 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 6F2 | 103P404050 | CHIP RESISTOR | 1/10W 47kΩ-J |
| R 6F3 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6F4 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 6F5 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 6F6 | 103P400060 | CHIP RESISTOR | 1/10W 27Ω-J |
| R 6F7 | 103P405010 | CHIP RESISTOR | 1/10W 150kΩ-J |
| R 6F8 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J |
| R 6F9 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 6G0 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 6G1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 6G2 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J |
| R 6G3 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6G4 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6G5 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 6G6 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6G7 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J |
| R 6G8 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 6G9 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J |
| R 6H0 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 6H1 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6H2 | 103P404000 | CHIP RESISTOR | 1/10W 18kΩ-J |
| R 6H3 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 6H4 | 103P404030 | CHIP RESISTOR | 1/10W 33kΩ-J |
| R 6H5 | 103P404010 | CHIP RESISTOR | 1/10W 22kΩ-J |
| R 6H6 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J [MS7] |
| R 6H7 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6H8 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6H9 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6J0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6J1 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J [MS7] |
| R 6J2 | 103P405010 | CHIP RESISTOR | 1/10W 150kΩ-J [MS7] |
| R 6J3 | 103P402010 | CHIP RESISTOR | 1/10W 470Ω-J [MS7] |
| R 6J4 | 103P401070 | CHIP RESISTOR | 1/10W 220Ω-J [MS7] |
| R 6J5 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J [MS7] |
| R 6J6 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J [MS7] |
| R 6J7 | 103P403010 | CHIP RESISTOR | 1/10W 3.3kΩ-J [MS7] |
| R 6J8 | 103P403060 | CHIP RESISTOR | 1/10W 8.2kΩ-J [MS7] |
| R 6J9 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J [MS7] |
| R 6K0 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6K1 | 103P403000 | CHIP RESISTOR | 1/10W 2.7kΩ-J [MS7] |
| R 6K2 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J [MS7] |
| R 6K3 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J [MS7] |
| R 6K4 | 103P401000 | CHIP RESISTOR | 1/10W 56Ω-J [MS7] |
| R 6K5 | 103P402030 | CHIP RESISTOR | 1/10W 680Ω-J [MS7] |
| R 6K6 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6K7 | 103P403050 | CHIP RESISTOR | 1/10W 6.8kΩ-J [MS7] |
| R 6K8 | 103P403070 | CHIP RESISTOR | 1/10W 10kΩ-J |
| R 6K9 | 103P402040 | CHIP RESISTOR | 1/10W 820Ω-J |
| R 6L0 | 103P402090 | CHIP RESISTOR | 1/10W 2.2kΩ-J [MS7] |
| R 6L1 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J [MS7] |
| R 6L2 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 6L3 | 103P400090 | CHIP RESISTOR | 1/10W 47Ω-J [MS7] |
| R 6L5 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J [MS7] |
| R 6L6 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6L7 | 103P404090 | CHIP RESISTOR | 1/10W 100kΩ-J |
| R 6L8 | 103P401030 | CHIP RESISTOR | 1/10W 100Ω-J [MS5] |
| R 6L8 | 103P470010 | CHIP RESISTOR | 1/10W 100Ω-F [MS7] |
| R 6L9 | 103P402070 | CHIP RESISTOR | 1/10W 1.5kΩ-J |
| R 6M0 | 103P402020 | CHIP RESISTOR | 1/10W 560Ω-J [MS7] |
| R 6M1 | 103P402080 | CHIP RESISTOR | 1/10W 1.8kΩ-J [MS7] |
| R 6M2 | 103P402050 | CHIP RESISTOR | 1/10W 1kΩ-J |
| R 6M7 | 103P473030 | CHIP RESISTOR | 1/10W 2.2kΩ-F [MS7] |
| R 6M8 | 103P403030 | CHIP RESISTOR | 1/10W 4.7kΩ-J [MS7] |
| R 6M9 | 103P404080 | CHIP RESISTOR | 1/10W 82kΩ-J |
| R 901 | 109D061060 | CEMENT WIRE | 7W 4.7Ω-K/J |
| RJ 01 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 02 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 03 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 04 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 05 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 06 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 07 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 08 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 09 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 10 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 11 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 12 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 13 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 1 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 2 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 3 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |
| RJ 4 | 103P409050 | CHIP RESISTOR | 1/10W 0Ω |

## CAPACITORS AND TRIMMERS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| C 101 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K |
| C 102 | 154P324040 | CHIP CAPACITOR | SL50V 220pF-J |
| C 105 | 141P131040 | CHIP CAPACITOR | B50V 2700pF-K |
| C 107 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 114 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J |
| C 201 | 154P323000 | CHIP CAPACITOR | SL50V 56pF-J |
| C 202 | 154P322000 | CHIP CAPACITOR | SL50V 22pF-J |
| C 205 | 141P139030 | CHIP CAPACITOR | B25V 0.1μF-K |
| C 207 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J |
| C 210 | 141P137080 | CHIP CAPACITOR | B50V 0.047μF-K |
| C 211 | 141P137080 | CHIP CAPACITOR | B50V 0.047μF-K |
| C 220 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J |
| C 227 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K |
| C 234 | 154P320090 | CHIP CAPACITOR | SL50V 7pF-C |
| C 235 | 154P324040 | CHIP CAPACITOR | SL50V 220pF-J |
| C 236 | 154P320090 | CHIP CAPACITOR | SL50V 7pF-C |
| C 245 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 249 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| C 252 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J [MS7] |
| C 256 | 154P324020 | CHIP CAPACITOR | SL50V 180pF-J [MS5] |
| C 256 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J [MS7] |
| C 2A0 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2A1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2A2 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J |
| C 2A7 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J |
| C 2B3 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 2B5 | 154P324020 | CHIP CAPACITOR | SL50V 180pF-J |
| C 2B6 | 154P325020 | CHIP CAPACITOR | SL50V 470pF-J |
| C 2B7 | 154P322020 | CHIP CAPACITOR | SL50V 27pF-J |
| C 2B8 | 154P320090 | CHIP CAPACITOR | SL50V 7pF-C |
| C 2B9 | 154P321020 | CHIP CAPACITOR | SL50V 10pF-C |
| C 2C0 | 141P131050 | CHIP CAPACITOR | B50V 3300pF-K |
| C 2C1 | 141P132030 | CHIP CAPACITOR | B50V 0.015μF-K |
| C 2C2 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2C3 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2C6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2C7 | 154P323080 | CHIP CAPACITOR | SL50V 120pF-J |
| C 2C9 | 154P325000 | CHIP CAPACITOR | SL50V 390pF-J |
| C 2D1 | 154P322020 | CHIP CAPACITOR | SL50V 27pF-J |
| C 2D2 | 154P321080 | CHIP CAPACITOR | SL50V 18pF-J |
| C 2D8 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J |
| C 2E0 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K |
| C 2E3 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2E7 | 154P320090 | CHIP CAPACITOR | SL50V 7pF-C |
| C 2F0 | 154P321000 | CHIP CAPACITOR | SL50V 8pF-C |
| C 2G1 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 2G2 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 2G4 | 154P331010 | CHIP CAPACITOR | CH50V 10pF-C |
| C 2H0 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2H1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2H4 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2H5 | 154P321020 | CHIP CAPACITOR | SL50V 10pF-C |
| C 2H7 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2H8 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J |
| C 2H9 | 154P322060 | CHIP CAPACITOR | SL50V 39pF-J |
| C 2J2 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z |
| C 2J3 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z |
| C 2J4 | 154P331030 | CHIP CAPACITOR | CH50V 12pF-J |
| C 2J5 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 2J6 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 2J7 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 2K3 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J |
| C 2K4 | 154P321080 | CHIP CAPACITOR | SL50V 18pF-J |
| C 2K5 | 154P322020 | CHIP CAPACITOR | SL50V 27pF-J |
| C 2K6 | 154P323000 | CHIP CAPACITOR | SL50V 56pF-J |
| C 2K7 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J |
| C 2L7 | 154P321000 | CHIP CAPACITOR | SL50V 8pF-C |
| C 2L8 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J |
| C 2N1 | 141P137040 | CHIP CAPACITOR | B25V 0.022μF-K |
| C 2X5 | 154P323080 | CHIP CAPACITOR | SL50V 120pF-J |
| C 2Y1 | 154P322040 | CHIP CAPACITOR | SL50V 33pF-J |
| C 2Y2 | 141P131070 | CHIP CAPACITOR | B50V 4700pF-K |
| C 310 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| C 311 | 141P130080 | CHIP CAPACITOR | B50V 820pF-K |
| C 318 | 141P131080 | CHIP CAPACITOR | B50V 5600pF-K |
| C 328 | 141P130060 | CHIP CAPACITOR | B50V 560pF-K |
| C 330 | 141P130090 | CHIP CAPACITOR | B50V 1000pF-K |
| C 331 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 3A2 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J [MS7] |
| C 3A3 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J [MS7] |
| C 3A8 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K [MS7] |
| C 3B0 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K [MS7] |
| C 3B3 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K [MS7] |
| C 3B4 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K [MS7] |
| C 3B5 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K [MS7] |
| C 3B6 | 141P132010 | CHIP CAPACITOR | B50V 0.01μF-K [MS7] |
| C 3B8 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J [MS7] |
| C 5A0 | 189P097020 | C-LYTIC-DBL-LAYER | FYD0H473Z |
| C 6A0 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A2 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A3 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A4 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A5 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A7 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J |
| C 6A8 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6A9 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B2 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B3 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B4 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B5 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6B7 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B8 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6B9 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6C1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6C2 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6C3 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6C4 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6C6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6C7 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6C8 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6C9 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6D0 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6D1 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6D5 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z |
| C 6D6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z [MS7] |
| C 6E0 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z |
| C 6E2 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z |
| C 6E6 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z [MS7] |
| C 6E9 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z [MS7] |
| C 6F1 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z [MS7] |
| C 6G0 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J |
| C 6G1 | 141P137080 | CHIP CAPACITOR | B50V 0.047μF-K |
| C 6G2 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J |
| C 6G4 | 141P137080 | CHIP CAPACITOR | B50V 0.047μF-K |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| C 6G5 | 154P323000 | CHIP CAPACITOR | SL50V 56pF-J | |
| C 6G7 | 141P137040 | CHIP CAPACITOR | B25V 0.022μF-K | |
| C 6G8 | 154P323060 | CHIP CAPACITOR | SL50V 100pF-J | |
| C 6G9 | 141P137080 | CHIP CAPACITOR | B50V 0.047μF-K | |
| C 6H0 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J | |
| C 6H2 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z | |
| C 6H4 | 154P333050 | CHIP CAPACITOR | CH50V 100pF-J | |
| C 6H5 | 141P137040 | CHIP CAPACITOR | B25V 0.022μF-K | |
| C 6H6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | |
| C 6H7 | 141P137060 | CHIP CAPACITOR | B50V 0.033μF-K | |
| C 6H8 | 154P323020 | CHIP CAPACITOR | SL50V 68pF-J | |
| C 6H9 | 154P322040 | CHIP CAPACITOR | SL50V 33pF-J | |
| C 6J0 | 154P324020 | CHIP CAPACITOR | SL50V 180pF-J | |
| C 6J1 | 154P324000 | CHIP CAPACITOR | SL50V 150pF-J | |
| C 6J3 | 141P137080 | CHIP CAPACITOR | B50V 0.047μF-K | |
| C 6J4 | 154P322020 | CHIP CAPACITOR | SL50V 27pF-J | |
| C 6J5 | 154P332070 | CHIP CAPACITOR | CH50V 47pF-J | |
| C 6J6 | 154P332070 | CHIP CAPACITOR | CH50V 47pF-J | |
| C 6J7 | 154P323040 | CHIP CAPACITOR | SL50V 82pF-J | |
| C 6K2 | 154P332030 | CHIP CAPACITOR | CH50V 33pF-J | [MS7] |
| C 6K4 | 154P321080 | CHIP CAPACITOR | SL50V 18pF-J | [MS7] |
| C 6K5 | 154P333050 | CHIP CAPACITOR | CH50V 100pF-J | [MS7] |
| C 6K6 | 141P133080 | CHIP CAPACITOR | F50V 0.01μF-Z | [MS7] |
| C 6K7 | 154P332030 | CHIP CAPACITOR | CH50V 33pF-J | [MS7] |
| C 6K8 | 154P323080 | CHIP CAPACITOR | SL50V 120pF-J | [MS7] |
| C 6K9 | 154P323080 | CHIP CAPACITOR | SL50V 120pF-J | [MS7] |
| C 6L0 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z | [MS7] |
| C 6L1 | 154P322080 | CHIP CAPACITOR | SL50V 47pF-J | |
| C 6L2 | 141P133090 | CHIP CAPACITOR | F50V 0.022μF-Z | |
| C 6L3 | 141P135080 | CHIP CAPACITOR | F25V 0.1μF-Z | [MS7] |
| C 6L9 | 154P322000 | CHIP CAPACITOR | SL50V 22pF-J | |
| C 6W0 | 154P322040 | CHIP CAPACITOR | SL50V 33pF-J | |
| C 905 | 185D064050 | ELECTROLYTIC-C | H400V 120μF-M | |
| VC501 | 202P109040 | TRIMMER CAPACITOR | 7.3pF-45pF | |
| VC8A0 | 202P109020 | TRIMMER CAPACITOR | 4.2pF-20pF | |

## SWITCHES

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| S 701 | 432P089040 | KEY BOARD SWITCH | POWER |
| S 702 | 432P089040 | KEY BOARD SWITCH | EJECT |
| S 704 | 431C099020 | SLIDE SWITCH | EDIT |
| S 8A1 | 432P089020 | KEY BOARD SWITCH | SELECT |
| S 8A2 | 432P089020 | KEY BOARD SWITCH | OTR |
| S 8A3 | 432P089020 | KEY BOARD SWITCH | S-OTR |
| S 8A4 | 432P089020 | KEY BOARD SWITCH | STOP |
| S 8A5 | 432P089020 | KEY BOARD SWITCH | STILL/PAUSE |
| S 8A6 | 432P089020 | KEY BOARD SWITCH | TAPE SPEED |
| S 8A9 | 431C099010 | SLIDE SWITCH | REMAIN |
| S 8B2 | 432P089020 | KEY BOARD SWITCH | DTR |
| S 8B4 | 432P089020 | KEY BOARD SWITCH | REW |
| S 8B5 | 432P089020 | KEY BOARD SWITCH | REC |
| S 8B6 | 432P089020 | KEY BOARD SWITCH | PROG REC |
| S 8B7 | 432P089020 | KEY BOARD SWITCH | CH-DOWN |
| S 8B8 | 432P089020 | KEY BOARD SWITCH | REPEAT |
| S 8B9 | 431C099010 | SLIDE SWITCH | VIDEO MUTE |
| S 8C1 | 432P089020 | KEY BOARD SWITCH | DISPLAY |
| S 8C2 | 432P089020 | KEY BOARD SWITCH | TUNING |
| S 8C4 | 432P089020 | KEY BOARD SWITCH | FF |
| S 8C5 | 432P089020 | KEY BOARD SWITCH | AFT |
| S 8C6 | 432P089020 | KEY BOARD SWITCH | FT+ |
| S 8C7 | 432P089020 | KEY BOARD SWITCH | CH-UP |
| S 8C9 | 431C099010 | SLIDE SWITCH | DATE REC |
| S 8D0 | 431C099010 | SLIDE SWITCH | COLOR-1 |
| S 8D1 | 431C099040 | SLIDE SWITCH | COLOR-2 |
| S 8D4 | 432P089020 | KEY BOARD SWITCH | PB |
| S 8D5 | 432P089020 | KEY BOARD SWITCH | SKIP |
| S 8D6 | 432P089020 | KEY BOARD SWITCH | FT- |
| S 8D7 | 432P089020 | KEY BOARD SWITCH | BAND |
| S 8R0 | 432P089020 | KEY BOARD SWITCH | RESET |
| SW570 | 439P019010 | MODE SELECT SWITCH | |
| SW571 | 439P020010 | LIMIT SWITCH | |

## MISCELLANEOUS

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION | |
|---|---|---|---|---|
| | 242D212040 | IF CABLE | | |
| | 295P099030 | TUNER VIF PACK | | |
| CU 01 | 295P192010 | RF CONVERTER | | |
| CU HU | 243C094030 | CARD LEAD | 13P | [MS7] |
| DC CC | 243C061020 | CARD LEAD | 9P | |
| DM CM | 243C061030 | CARD LEAD | 21P | |
| F 901 | 283D047050 | FUSE | 2.5A-T | |
| J 2A0 | 451C096020 | PIN JACK | | |
| J 2A1 | 451C096020 | PIN JACK | | |
| J 3A0 | 451C096010 | PIN JACK | | [MS5] |
| J 3A1 | 451C096010 | PIN JACK | | [MS5] |
| J 3A1 | 451C105080 | PIN JACK | | [MS7] |
| J 3A2 | 451C086010 | PIN JACK | | [MS7] |
| J 3A3 | 451C086010 | PIN JACK | | [MS7] |
| J 3B1 | 451C086090 | PIN JACK | | [MS7] |
| J 3B2 | 451C086090 | PIN JACK | | [MS7] |
| J 3B3 | 451C086090 | PIN JACK | | [MS7] |
| M 470 | 288P107020 | CAPSTAN MOTOR | | |
| M 570 | 288P088020 | DRUM MOTOR | | |
| M 571 | 288D025010 | LOADING MOTOR | | |
| PC901 | 268P050010 | PHOTO COUPLER | TLP621 | |
| SA901 | 299P089010 | SURGE ABSORBER | | |
| SG CG | 243C049080 | CARD LEAD | 13P | |
| SH CH | 243C063020 | CARD LEAD | 15P | |
| T 370 | 460P060050 | HEAD | | |
| T 371 | 460P061020 | FE HEAD | | |
| TK CK | 243C065020 | CARD LEAD | 23P | |
| TL SL | 243C072090 | CARD LEAD | 19P | |
| V 8A0 | 253P084010 | TUBE FLUOR | BG-953GK | |
| X 2H0 | 285P055020 | CRYSTAL RESONATOR | | |
| X 2J0 | 285P055010 | CRYSTAL RESONATOR | | |
| X 501 | 285P084010 | CRYSTAL RESONATOR | | |
| X 502 | 285P123010 | CRYSTAL RESONATOR | | |
| X 6A0 | 285P083010 | CRYSTAL RESONATOR | | |
| X 6A1 | 285P074010 | CRYSTAL RESONATOR | M3-20 | |
| X 8A0 | 285P063040 | CRYSTAL RESONATOR | 4.194304MHz | |
| X 8A1 | 285P054010 | CRYSTAL RESONATOR | 32.768kHz | |
| Z 8A0 | 939P359010 | PREAMP UNIT | | |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|
| **PRINTED CIRCUIT BOARD ASSY'S** | | | |
| | 927B421002 | CONTROL PCB ASSY | [MS5] |
| | 927B421001 | CONTROL PCB ASSY | [MS7] |
| | 928C510010 | DECK PCB ASSY | |
| | 928B940020 | HEAD-AMP PCB ASSY | [MS5] |
| | 928B940021 | HEAD-AMP PCB ASSY | [MS7] |
| | 927B422001 | Hi-Fi PCB ASSY | [MS7] |
| | 928C709001 | JACK PCB ASSY | [MS7] |
| | 927B423002 | POWER PCB ASSY | [MS5] |
| | 927B423001 | POWER PCB ASSY | [MS7] |
| | 927B420002 | SIGNAL PCB ASSY | [MS5] |
| | 927B420001 | SIGNAL PCB ASSY | [MS7] |
| | 927B424002 | TIMER PCB ASSY | [MS5] |
| | 927B424001 | TIMER PCB ASSY | [MS7] |

| SYMBOL NO. | PARTS NO. | PARTS NAME | DESCRIPTION |
|---|---|---|---|

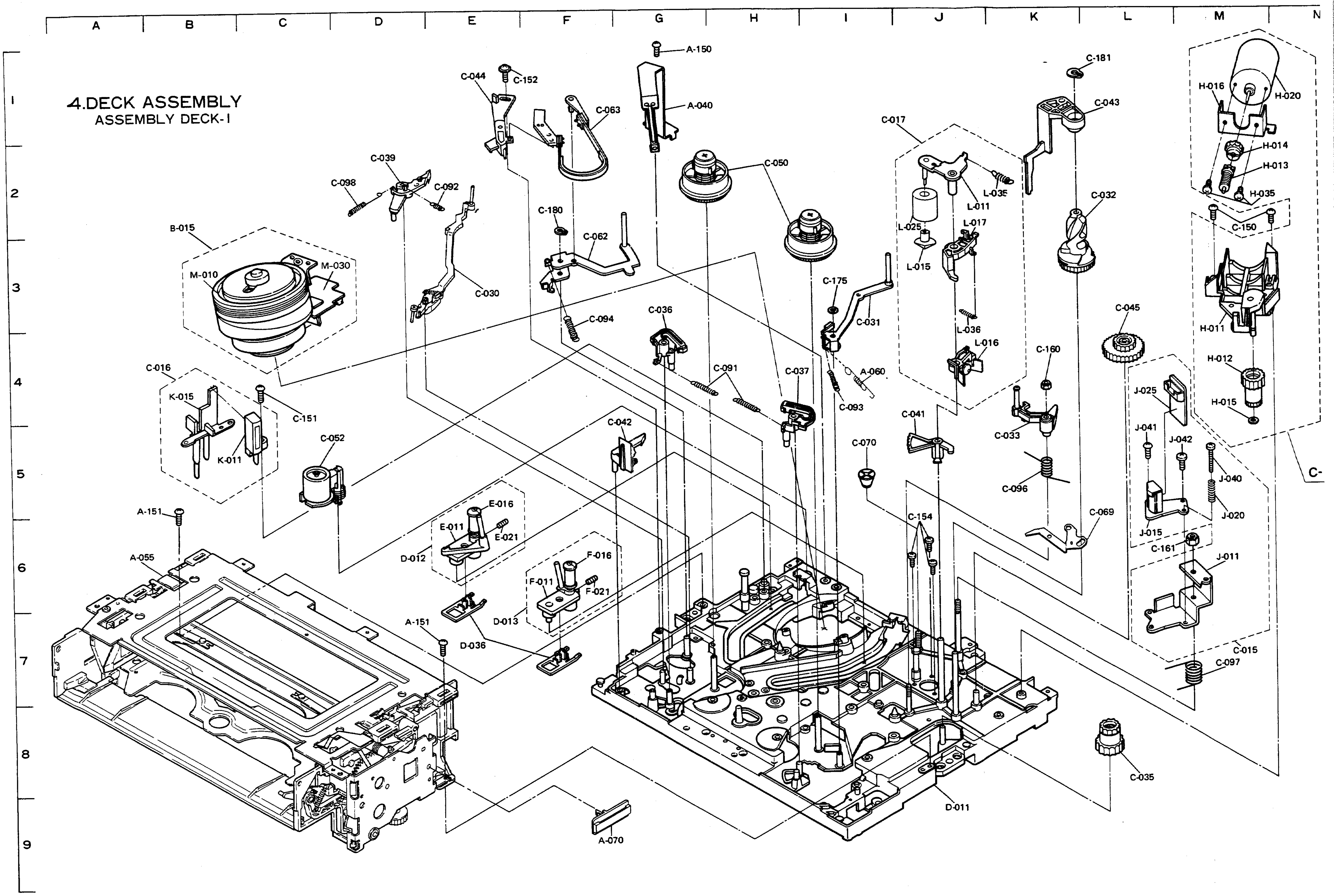
# MEMO

# MEMO

# MEMO

# 4.DECK ASSEMBLY

ASSEMBLY DECK-1



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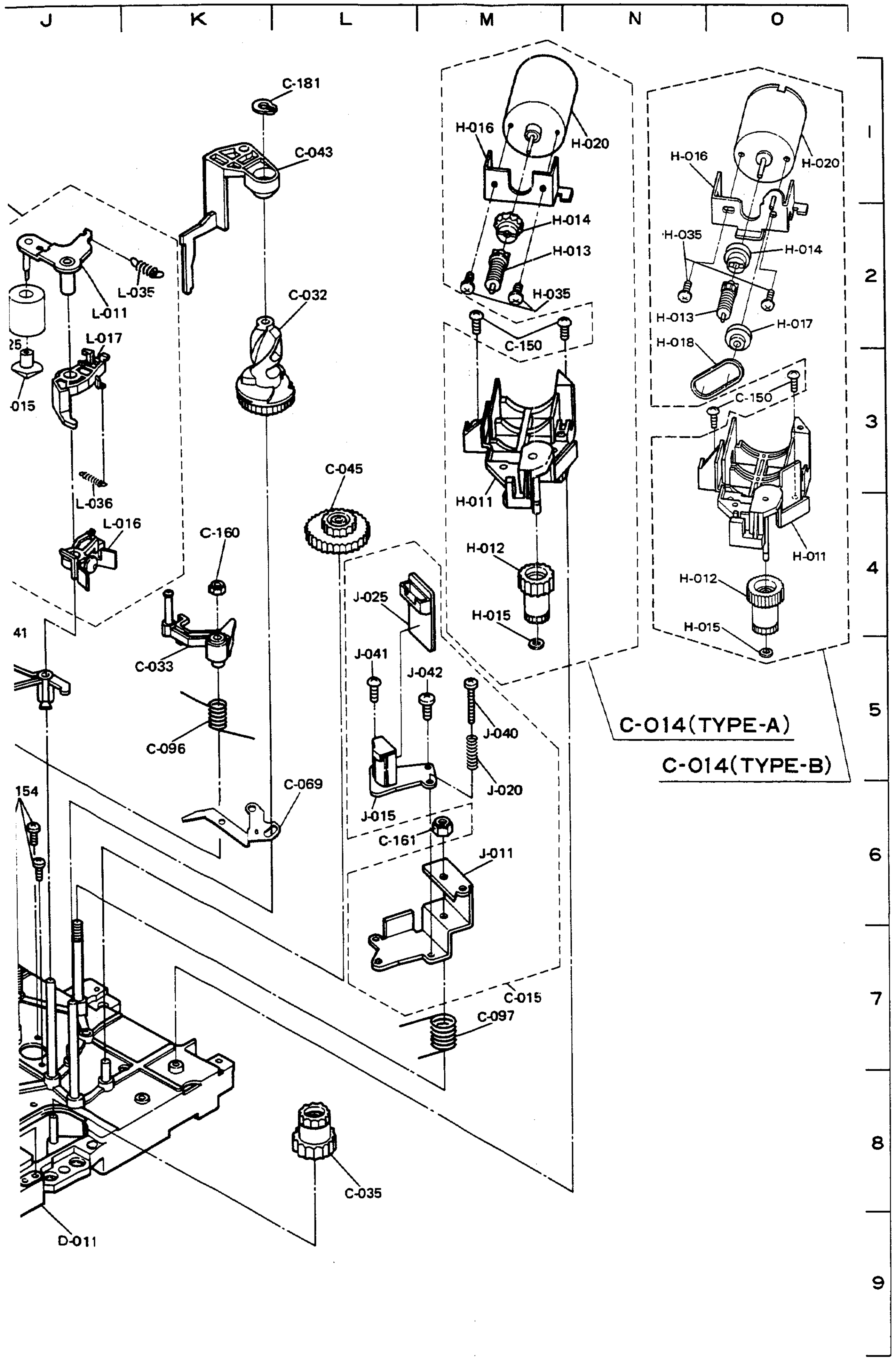


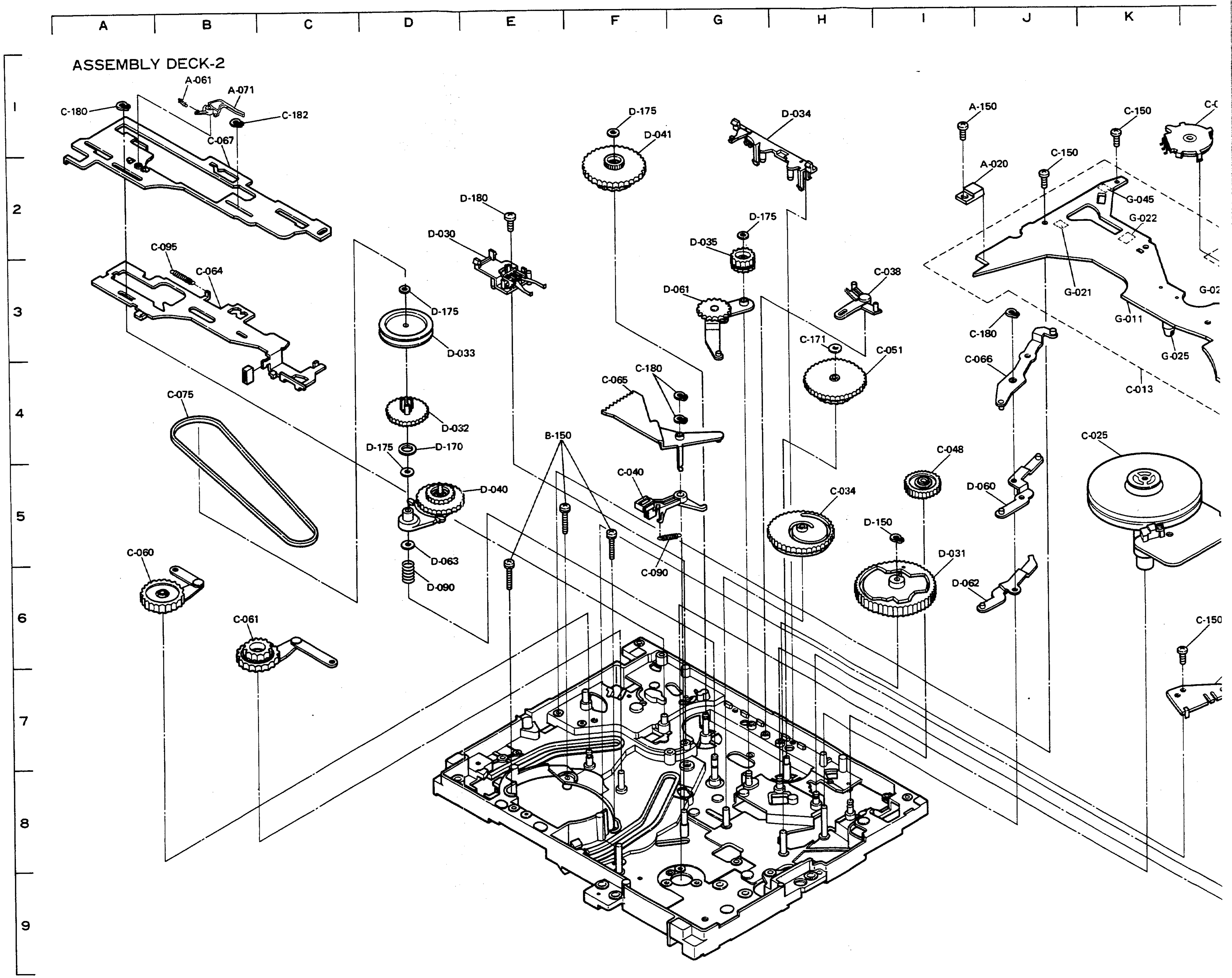
* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| B-015 | 948B284006 | ○ | B-2 | | ASSY-DRUM | [HS-MS5] | 01 |
| B-015 | 948B207009 | ○ | B-2 | | ASSY-DRUM | [HS-MS7] | 01 |
| M-010 | 927B510021 | ○ | B-3 | | ASSY-UPPER-DRUM | [HS-MS5] | 01 |
| M-010 | 927B373019 | ○ | B-3 | | ASSY-UPPER-DRUM | [HS-MS7] | 01 |
| M-030 | 288P088010 | ○ | C-3 | | MOTOR-DRUM | M570[HS-MS5] | 01 |
| M-030 | 288P088020 | ○ | C-3 | | MOTOR-DRUM | M570[HS-MS7] | 01 |
| D-011 | 948A071020 | | J-9 | | ASSY-MAIN-PLATE | | 01 |
| D-012 | 948D018040 | ○ | D-6 | | ASSY-TAPE-GUIDE-S | | 01 |
| D-012 | 948D018050 | ○ | D-6 | | ASSY-TAPE-GUIDE-S | | 01 |
| D-012 | 948D018060 | ○ | D-6 | | ASSY-TAPE-GUIDE-S | | 01 |
| E-011 | 635B059010 | ○ | E-6 | | TAPE-GUIDE-S | | 01 |
| E-011 | 635B059020 | ○ | E-6 | | TAPE-GUIDE-S | | 01 |
| E-011 | 635B059030 | ○ | E-6 | | TAPE-GUIDE-S | | 01 |
| E-016 | 522D177010 | ○ | E-5 | | GUIDE-ROLLER | | 01 |
| E-021 | 669D197020 | | E-6 | | SET-SCREW-F | M3×0.5-4 | 01 |
| D-013 | 948D019040 | ○ | E-7 | | ASSY-TAPE-GUIDE-T | | 01 |
| D-013 | 948D019050 | ○ | E-7 | | ASSY-TAPE-GUIDE-T | | 01 |
| D-013 | 948D019060 | ○ | E-7 | | ASSY-TAPE-GUIDE-T | | 01 |
| F-011 | 635B060010 | ○ | F-6 | | TAPE-GUIDE-T | | 01 |
| F-011 | 635B060020 | ○ | F-6 | | TAPE-GUIDE-T | | 01 |
| F-011 | 635B060030 | ○ | F-6 | | TAPE-GUIDE-T | | 01 |
| F-016 | 522D177010 | ○ | F-6 | | GUIDE-ROLLER | | 01 |
| F-021 | 669D197020 | | F-6 | | SET-SCREW-F | M3×0.5-4 | 01 |
| D-036 | 621D522010 | ○ | E-7 | | SLIDER | | 02 |
| C-015 | 928D032030 | ○ | M-7 | | ASSY-AC-HEAD | | 01 |
| J-011 | 592C760010 | | M-6 | | ARM-AC | | 01 |
| J-015 | 460P060050 | ○ | L-6 | | HEAD-AC | T370 | 01 |
| J-020 | 570D593010 | | M-6 | | SPRING-AC | | 01 |
| J-025 | 215C393010 | | L-4 | | PWB-AC-F | | 01 |
| J-040 | 650P261040 | | M-5 | | SCREW-F-FE-PAN | M2.6×0.45-14 | 01 |
| J-041 | 669D227010 | ○ | L-5 | | SCREW-TS | M2.6×6 | 01 |
| J-042 | 669D206030 | | L-5 | | SCREW | | 01 |
| C-016 | 928D033010 | | B-4 | | ASSY-FE-HEAD | | 01 |
| K-011 | 460P061020 | ○ | B-5 | | HEAD-FE | T371 | 01 |
| K-015 | 641C870010 | | B-4 | | HOLDER-FE | | 01 |
| C-017 | 948D020010 | ○ | I-1 | | ASSY-ARM-PINCH | | 01 |
| L-011 | 591B536010 | | J-2 | | ARM-PINCH | | 01 |
| L-015 | 621D523010 | ○ | J-3 | | CAP-ROLLER | | 01 |
| L-016 | 641C797010 | | J-4 | | LEVER-CAM-PINCH | | 01 |
| L-017 | 641C798010 | | J-2 | | LEVER-ARM-PINCH | | 01 |
| L-025 | 522D174010 | ○ | J-2 | | ROLLER-PINCH | | 01 |
| L-035 | 572D314010 | ○ | K-2 | | SPRING-PINCH | | 01 |
| L-036 | 572D315010 | ○ | J-4 | | SPRING-CAM-PINCH | | 01 |
| C-030 | 641B368010 | ○ | E-3 | | ARM-TENS-REG-S2 | | 01 |
| C-031 | 591B551020 | ○ | I-3 | | ARM-TENS-REG-T | | 01 |
| C-032 | 641B314020 | ○ | L-2 | | CAM-PINCH | | 01 |
| C-033 | 635B068010 | ○ | K-5 | | ARM-TU-G | | 01 |
| C-035 | 641C782010 | ○ | L-8 | | GEAR-JOINT | | 01 |
| C-036 | 641C791010 | ○ | G-3 | | BRAKE-MAIN-S | | 01 |
| C-037 | 641C792010 | ○ | H-4 | | BRAKE-MAIN-T | | 01 |
| C-039 | 641C796010 | | D-2 | | LEVER-TENS | | 01 |
| C-041 | 641C991010 | ○ | J-4 | | ARM-GEAR-TU-G2 | | 01 |
| C-042 | 641C804010 | ○ | F-5 | | LEVER-REC-SAFETY | | 01 |
| C-043 | 641C806010 | | L-1 | | CAP-ARM-PINCH | | 01 |
| C-044 | 641C861010 | | E-1 | | HOLDER-T-BAND | | 01 |
| C-045 | 621D509010 | ○ | L-3 | | GEAR-1 | | 01 |
| C-050 | 522C076020 | ○ | H-2 | | UNIT-REEL-DISK | | 02 |
| C-052 | 641B319010 | ○ | C-5 | | UNIT-IMP-ROLLER | | 01 |
| C-062 | 591B547010 | | F-3 | | ARM-TENSION | | 01 |

* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| C-063 | 591B552010 | ○ | F-1 | | BELT-TENS-BRAKE | | 01 |
| C-069 | 592C930010 | | L-6 | | LEVER-TENS-TU | | 01 |
| C-070 | 635D063010 | ○ | I-5 | | NUT-TAPER | | 01 |
| C-091 | 572D309010 | ○ | H-4 | | SPRING-M-B | | 02 |
| C-092 | 572D391010 | ○ | E-2 | | SPRING-TENS-REG-S2 | | 01 |
| C-093 | 572D390010 | ○ | I-4 | | SPRING-TENS-REG-T2 | | 01 |
| C-094 | 572D312010 | ○ | F-3 | | SPRING-TENS | | 01 |
| C-096 | 572D317010 | ○ | K-5 | | SPRING-TU-G | | 01 |
| C-097 | 572D318010 | ○ | M-7 | | SPRING-ARM-A/C | | 01 |
| C-098 | 572D328010 | ○ | D-2 | | SPRING-REC-SAFETY | | 01 |
| C-150 | 669D227010 | ○ | M-2 | (0-3) | SCREW-TS | M2.6×6 | 02 |
| C-151 | 669D227030 | ○ | C-4 | | SCREW-TS | M2.6×10 | 01 |
| C-152 | 669D228010 | | E-1 | | SCREW-TS-SEMS | M2.6×6 | 01 |
| C-154 | 669D285040 | | J-6 | | SCREW-TB-PAN | M2.6×8 | 03 |
| C-160 | 674D081020 | ○ | K-4 | | NUT-NYLON | M3×0.5 | 01 |
| C-161 | 674D100010 | ○ | L-6 | | NUT-NYLON-S | M4×0.7 | 01 |
| C-175 | 552C007030 | ○ | I-3 | | CUT-WASHER | 2.5 | 01 |
| C-180 | 685C009010 | ○ | F-2 | | GRIP-RING | | 01 |
| C-181 | 685C009020 | ○ | L-1 | | GRIP-RING | | 01 |
| A-040 | 299C025010 | ○ | G-1 | | BRUSH | | 01 |
| A-055 | 590A256020 | ○ | A-6 | | UNIT-F/L-F | | 01 |
| A-060 | 572D401010 | | I-4 | | SPRING-RS | | 01 |
| A-070 | 641C906010 | | F-9 | | HOLDER-CARD | | 01 |
| A-150 | 669D227010 | ○ | G-1 | | SCREW-TS | M2.6×6 | 01 |
| A-151 | 669D227020 | ○ | A-5 | D-7 | SCREW-TS | M2.6×8 | 02 |
| TYPE-A | | | | | | | |
| C-014 | 928D031010 | ○ | N-5 | | ASSY-LOAD-MOTOR | | 01 |
| H-011 | 641B313010 | | M-4 | | HOLDER-MOTOR | | 01 |
| H-012 | 641C783010 | | M-4 | | GEAR-WHEEL | | 01 |
| H-013 | 641C801010 | | M-2 | | GEAR-WORM | | 01 |
| H-014 | 621D525010 | | M-2 | | CUPLING | | 01 |
| H-015 | 552C007030 | ○ | M-4 | | CUT-WASHER | 2.5 | 01 |
| H-016 | 596D157010 | | M-1 | | PLATE-HOLDER-M | | 01 |
| H-020 | 288D025010 | ○ | M-1 | | MOTOR-LOADING | M571 | 01 |
| H-035 | 650P300030 | | M-2 | | SCREW-F-FE-PAN | M3×0.5-3 | 02 |
| TYPE-B | | | | | | | |
| C-014 | 928D031010 | ○ | N-5 | | ASSY-LOAD-MOTOR | | 01 |
| H-011 | 641B313010 | | 0-4 | | HOLDER-MOTOR | | 01 |
| H-012 | 641C783010 | | N-4 | | GEAR-WHEEL | | 01 |
| H-013 | 641C801010 | | N-2 | | GEAR-WORM | | 01 |
| H-014 | 621D784010 | | 0-2 | | CUPLING-2 | | 01 |
| H-015 | 552C007030 | ○ | N-4 | | CUT-WASHER | 2.5 | 01 |
| H-016 | 593C059010 | | N-1 | | PLATE-HOLDER-M2 | | 01 |
| H-017 | 621D793010 | ○ | 0-1 | | PULLEY-L | | 01 |
| H-018 | 521D074010 | ○ | N-2 | | BELT-LM | | 01 |
| H-020 | 288D025010 | ○ | 0-1 | | MOTOR-LOADING | M571 | 01 |
| H-035 | 650P300030 | | N-2 | | SCREW-F-FE-PAN | M3×0.5-3 | 02 |

# ASSEMBLY DECK-2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C-171
C-051
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A-020
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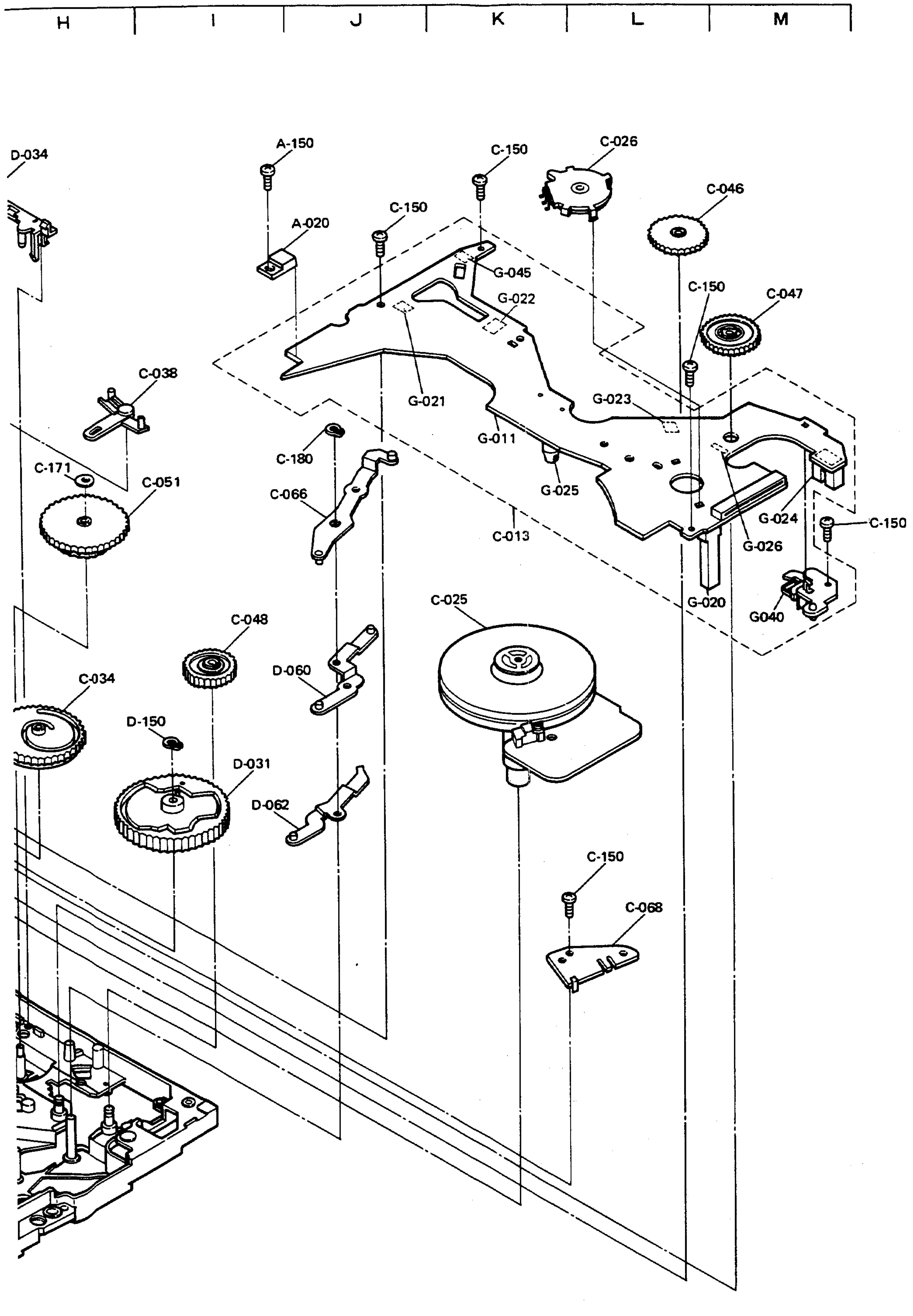
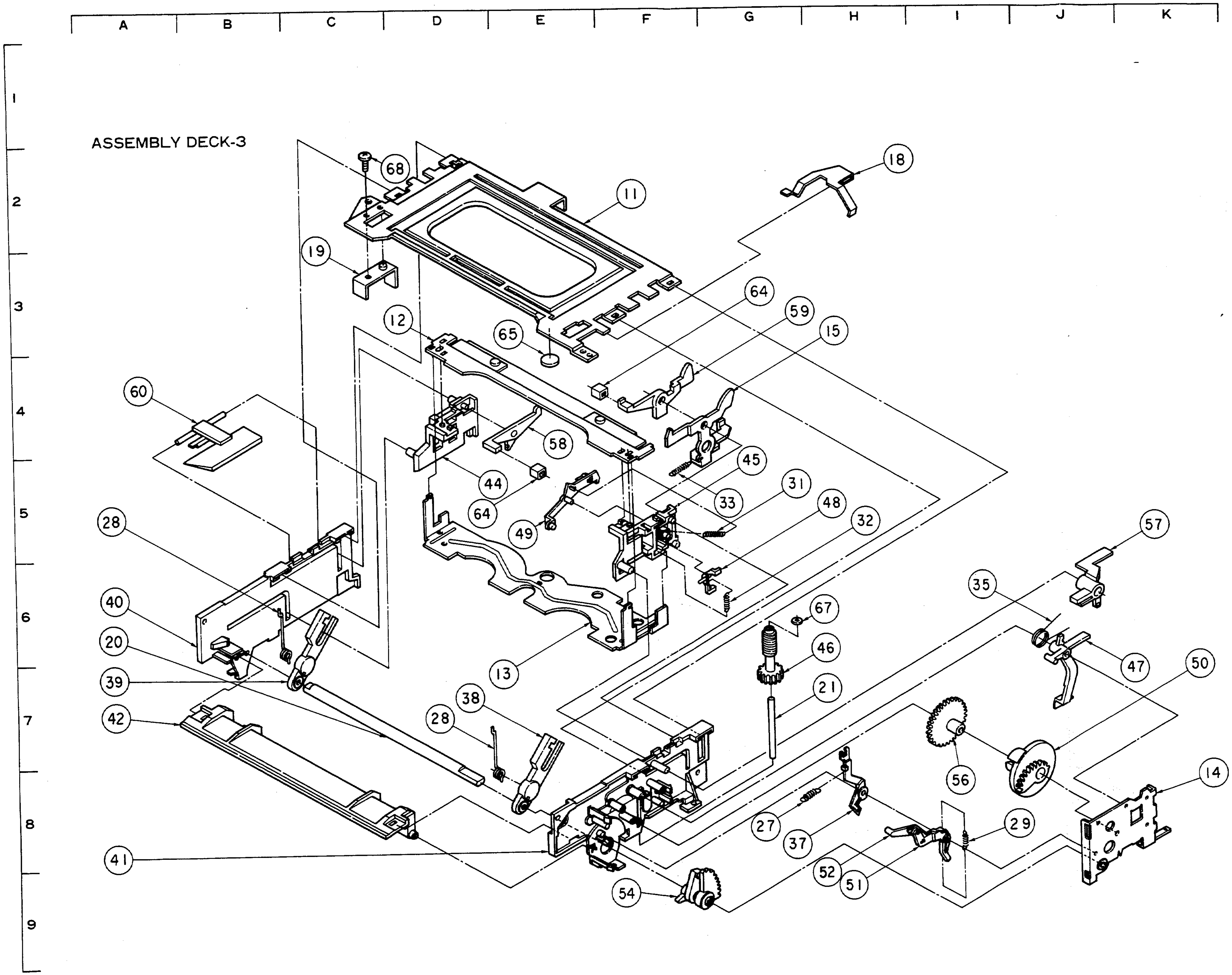
D-062
C-025
C-150



* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| B-150 | 669D431040 | | E-4 | | SCREW-SEMS | M2. 6×0. 45-10 | 03 |
| D-030 | 641B310010 | ○ | E-2 | | UNIT-LEVER-SHIFT | | 01 |
| D-031 | 641B323010 | ○ | I-5 | | CAM-MAIN-1 | | 01 |
| D-032 | 641C789020 | ○ | D-4 | | PULLEY-GEAR | | 01 |
| D-033 | 641C790010 | ○ | D-3 | | PULLEY-BELT | | 01 |
| D-034 | 641C815010 | | H-1 | | HOLDER-P-CAM | | 01 |
| D-035 | 621D516010 | ○ | G-2 | | GEAR-F/L-1 | | 01 |
| D-040 | 522C077020 | ○ | E-5 | | UNIT-GEAR-IDLER | | 01 |
| D-041 | 522C083010 | ○ | F-1 | | UNIT-GEAR-REEL-S | | 01 |
| D-060 | 591B559010 | | I-5 | | LEVER-C | | 01 |
| D-061 | 591B567010 | ○ | G-3 | | LEVER-F/L-ID | | 01 |
| D-062 | 592C830010 | | I-6 | | LEVER-RS | | 01 |
| D-063 | 596D057010 | ○ | D-5 | | WASHER-R | T=0. 3 | 01 |
| D-090 | 572D306010 | ○ | D-6 | | SPRING-SHIFT | | 01 |
| D-150 | 685C009010 | ○ | H-5 | | GRIP-RING | | 01 |
| D-170 | 552C010040 | ○ | D-4 | | WASHER-THRUST | 6. 7×12×0. 13 | 01 |
| D-175 | 552C007030 | ○ | D-3<br>G-2 | D-4<br>F-1 | CUT-WASHER | 2. 5 | 04 |
| D-180 | 669D227010 | ○ | E-2 | | SCREW-TS | M2. 6×6 | 01 |
| C-013 | 928C510010 | ○ | K-4 | | ASSY-PWB-DECK | | 01 |
| G-011 | 240A651010 | | K-3 | | PWB-DECK | | 01 |
| G-020 | 268P014020 | ○ | L-4 | | TRANSISTOR | Q571 PN205L-(NC) | 01 |
| G-021 | 268P014020 | ○ | J-3 | | TRANSISTOR | Q572 PN205L-(NC) | 01 |
| G-022 | 268P044010 | ○ | K-2 | | PHOTO-INTERRUPTER | Q573 ON2270-R | 01 |
| G-023 | 268P044010 | ○ | L-3 | | PHOTO-INTERRUPTER | Q574 ON2270-R | 01 |
| G-024 | 268P045010 | ○ | M-4 | | PHOTO-INTERRUPTER | Q575 GP1L52 | 01 |
| G-025 | 264P307020 | ○ | K-4 | | DIODE-LE | D570 GL-451 | 01 |
| G-026 | 264P515010 | ○ | M-4 | | DIODE | D571 MA165 | 01 |
| G-040 | 299P124010 | ○ | M-4 | | LATCH-MAGNET | L570 | 01 |
| G-045 | 439P020010 | ○ | K-2 | | SW-LIMIT | SW571 | 01 |
| C-025 | 288P107020 | ○ | K-4 | | MOTOR-CP | M470 | 01 |
| C-026 | 439P019010 | ○ | L-1 | | SW-MODE-SELECT-F | SW570 | 01 |
| C-034 | 641B324010 | ○ | H-5 | | CAM-MAIN-2 | | 01 |
| C-038 | 641C795010 | | I-3 | | LEVER-IDLER-S | | 01 |
| C-040 | 641C800010 | ○ | F-5 | | BRAKE-CP | | 01 |
| C-046 | 621D517010 | ○ | L-1 | | GEAR-F/L-2 | | 01 |
| C-047 | 621D518010 | ○ | M-2 | | GEAR-F/L-3 | | 01 |
| C-048 | 621D519010 | ○ | I-4 | | GEAR-F/L-4 | | 01 |
| C-051 | 522C078040 | ○ | I-3 | | UNIT-GEAR-REEL | | 01 |
| C-060 | 591B543010 | ○ | A-5 | | ARM-LOAD-S | | 01 |
| C-061 | 591B544010 | ○ | B-6 | | ARM-LOAD-T | | 01 |
| C-064 | 591B554010 | | B-3 | | PLATE-CAM-C | | 01 |
| C-065 | 591B557010 | ○ | F-4 | | ARM-GEAR-LOAD | | 01 |
| C-066 | 591B558010 | | J-4 | | LEVER-B | | 01 |
| C-067 | 592C949010 | | B-1 | | UNIT-PLATE-CAM-B3 | | 01 |
| C-068 | 596D186010 | | L-6 | | PLATE-SHIELD-F | | 01 |
| C-075 | 521D062010 | ○ | B-4 | | BELT-REEL | | 01 |
| C-090 | 572D308020 | ○ | F-6 | | SPRING-B-CP | | 01 |
| C-095 | 572D313010 | ○ | B-2 | | SPRING-CAM-C | | 01 |
| C-150 | 669D227010 | ○ | J-2<br>K-2<br>M-4 | K-1<br>L-6 | SCREW-TS | M2. 6×6 | 05 |
| C-171 | 552C006020 | ○ | H-3 | | WASHER-THRUST | 2. 0×0. 13 | 01 |
| C-180 | 685C009010 | ○ | A-1<br>J-3 | F-4 | GRIP-RING | | 04 |
| C-182 | 552C009050 | ○ | C-1 | | CUT-WASHER | | 01 |
| A-020 | 260P630010 | ○ | J-2 | | TRANSISTOR | Q971 2SD2012 | 01 |
| A-061 | 572D404010 | | B-1 | | SPRING-B-RS | | 01 |
| A-071 | 641C928010 | | B-1 | | LEVER-B-RS | | 01 |
| A-150 | 669D227010 | ○ | I-1 | | SCREW-TS | M2. 6×6 | 01 |

## ASSEMBLY DECK-3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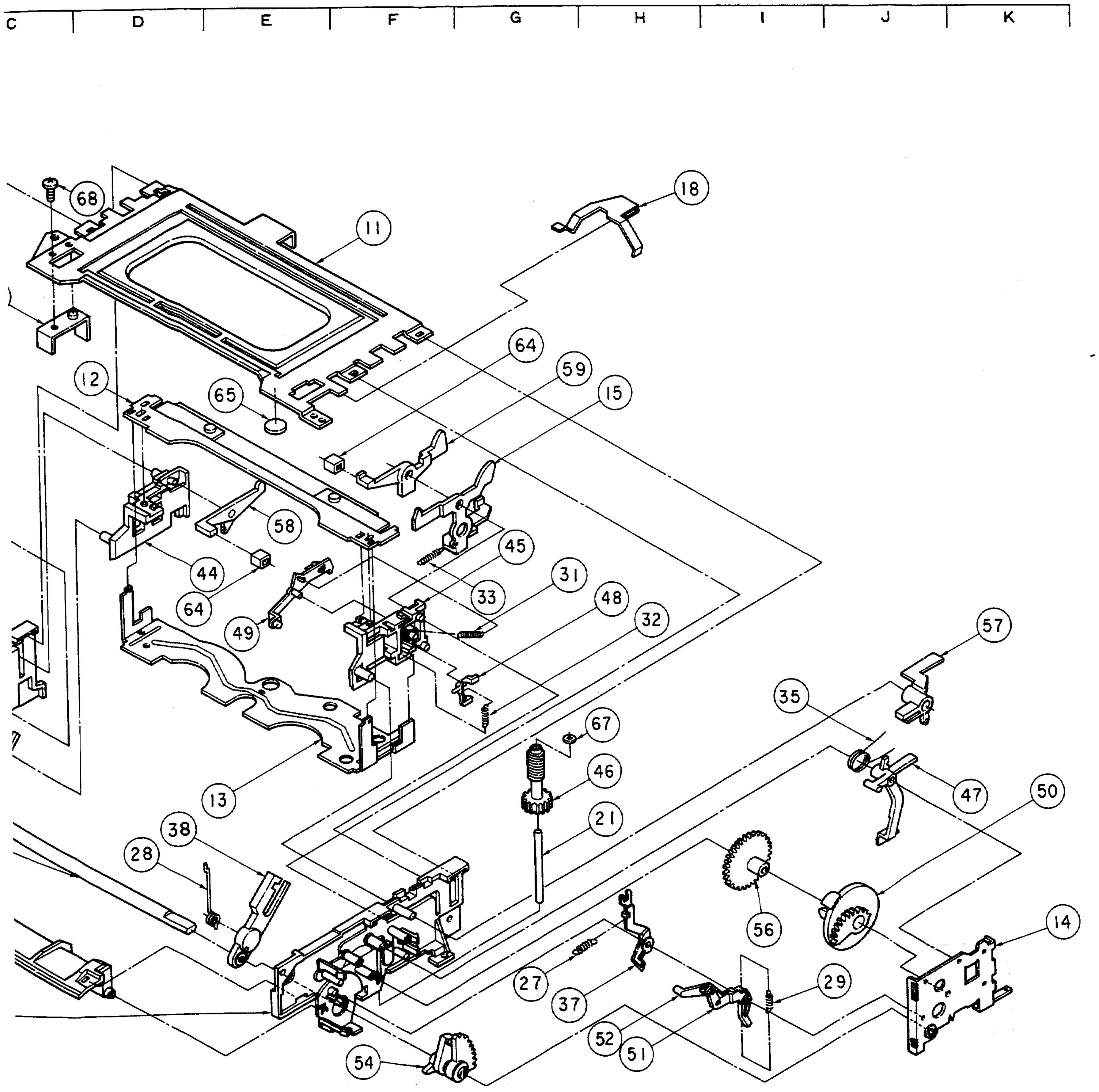
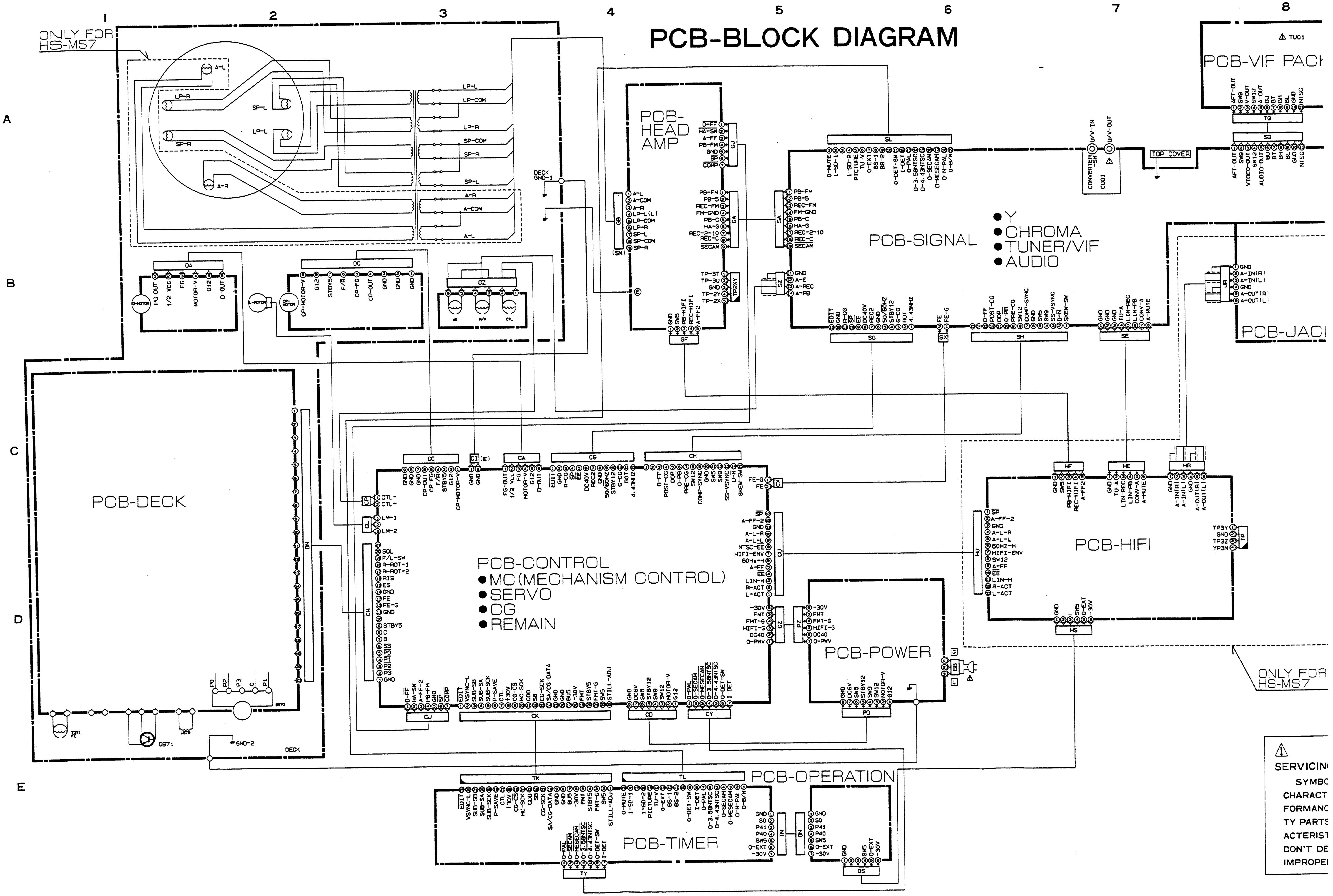
| ITEM | PARTS No. |
|---|---|
| 11 | 591B54501 |
| 12 | 593C00101 |
| 13 | 591B54601 |
| 14 | 591B54201 |
| 15 | 592C85101 |
| 18 | 596D15001 |
| 19 | 596D21701 |
| 20 | 631D13401 |
| 21 | 631D13501 |
| 27 | (not used) |
| 28 | 572D30101 |
| 29 | 572D38901 |
| 31 | 572D30401 |
| 32 | 572D30501 |
| 33 | 572D38001 |
| 35 | 572D36701 |
| 37 | (not used) |
| 38 | 641B31501 |
| 39 | 641B31502 |
| 40 | 641A11001 |
| 41 | 641A10901 |
| 42 | 641B30601 |
| 44 | 641B30901 |
| 45 | 641B30701 |
| 46 | 621D51301 |
| 47 | 621D51401 |
| 48 | 621D51501 |
| 49 | 641C79401 |
| 50 | 641C79301 |
| 51 | 641C89701 |
| 52 | 641C89801 |
| 54 | 641C85801 |
| 56 | 641C81401 |
| 57 | 641C85701 |
| 58 | 621D58501 |
| 59 | 621D58601 |
| 60 | 641C87801 |
| 64 | 642D49401 |
| 65 | (not used) |
| 67 | 552C00304 |
| 68 | -------- |



* Settelled Service Parts

| ITEM | PARTS No. | * | ADDRESS | | PARTS NAME | DESCRIPTION | Qt. |
|---|---|---|---|---|---|---|---|
| 11 | 591B545010 | | F-2 | | PLATE-ROOF | | 01 |
| 12 | 593C001010 | | D-3 | | PLATE-UPPER-P | | 01 |
| 13 | 591B546010 | | E-7 | | PLATE-BOTTOM | | 01 |
| 14 | 591B542010 | | K-8 | | PLATE-SIDE-TU | | 01 |
| 15 | 592C851010 | | H-3 | | LEVER-LOCK-FL | | 01 |
| 18 | 596D150010 | | H-2 | | PLATE-EARTH | | 01 |
| 19 | 596D217010 | | C-3 | | PLATE-GUARD | | 01 |
| 20 | 631D134010 | | A-6 | | SHAFT-FL | | 01 |
| 21 | 631D135010 | | H-7 | | SHAFT-WORM | | 01 |
| 27 | (not used) | | | | | | |
| 28 | 572D301010 | ○ | A-5 | D-7 | SPRING-FL | | 02 |
| 29 | 572D389010 | | J-8 | | SPRING-DOOR-SUB | | 01 |
| 31 | 572D304010 | | G-5 | | SPRING-OPENER-LID | | 01 |
| 32 | 572D305010 | | H-5 | | SPRING-JUT-FL | | 01 |
| 33 | 572D380010 | | G-5 | | SPRING-LEVER-LOCK | | 01 |
| 35 | 572D367010 | | I-6 | | SPRING-LEVER-SW | | 01 |
| 37 | (not used) | | | | | | |
| 38 | 641B315010 | ○ | A-7 | | ARM-FL | | 01 |
| 39 | 641B315020 | ○ | D-7 | | ARM-FL | | 01 |
| 40 | 641A110010 | | A-6 | | HOLDER-SIDE-SP | | 01 |
| 41 | 641A109010 | | A-8 | | HOLDER-SIDE-TU | | 01 |
| 42 | 641B306010 | | A-7 | | GUIDE-INSERT | | 01 |
| 44 | 641B309010 | | D-5 | | HOUSING-CASSETTE-SP | | 01 |
| 45 | 641B307010 | | G-5 | | HOUSING-CASSETTE-TU | | 01 |
| 46 | 621D513010 | ○ | H-6 | | GEAR-WORM-FL | | 01 |
| 47 | 621D514010 | | K-7 | | LEVER-SW-FL | | 01 |
| 48 | 621D515010 | ○ | H-5 | | JUT | | 01 |
| 49 | 641C794010 | | E-5 | | OPENER-LID-CAS | | 01 |
| 50 | 641C793010 | ○ | K-7 | | GEAR-DRIVE | | 01 |
| 51 | 641C897010 | ○ | H-9 | | ARM-FL-DOOR-A | | 01 |
| 52 | 641C898010 | ○ | H-9 | | ARM-FL-DOOR-B | | 01 |
| 54 | 641C858010 | ○ | F-9 | | ARM-LOCK | | 01 |
| 56 | 641C814010 | ○ | I-8 | | GEAR-W-H-F/L | | 01 |
| 57 | 641C857010 | | K-5 | | LEVER-PICK-CAS | | 01 |
| 58 | 621D585010 | | E-4 | | LEVER-CAS-SP | | 01 |
| 59 | 621D586010 | | G-3 | | LEVER-CAS-TU | | 01 |
| 60 | 641C878010 | | A-4 | | STOPPER-SP-FL | | 01 |
| 64 | 642D494010 | | D-5 | G-3 | RUBBER-FL | | 02 |
| 65 | (not used) | | | | | | |
| 67 | 552C003040 | | H-6 | | WASHER-THRUST | 3 T0.5 | 01 |
| 68 | -------- | | D-2 | | SCREW | 2.6-5 | 01 |

# PCB-BLOCK DIAGRAM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● CHROMA
● TUNER/VIF
● AUDIO
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L-MOTOR
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GND-2
Q971
PCB-CONTROL
● MC(MECHANISM CONTROL)
● SERVO
● CG
● REMAIN
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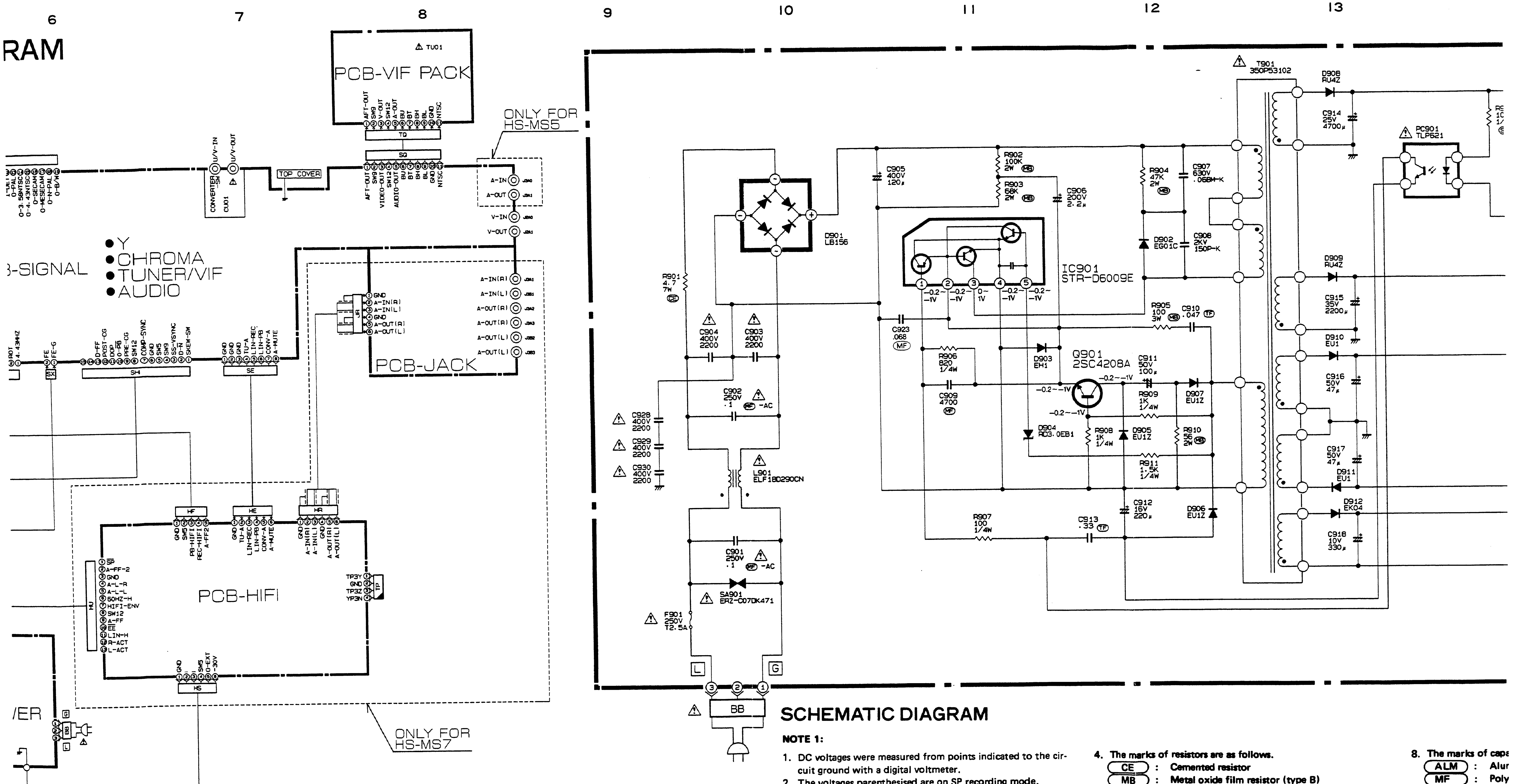
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0-3.58NTSC
0-4.43NTSC
0-SECAM
0-MESECAM
0-N-PAL
0-B/W
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●CHROMA
●TUNER/VIF
●AUDIO
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A-IN(L)
A-OUT(R)
A-OUT(R)
A-OUT(L)
A-OUT(L)
PCB-JACK
4.43MHZ
FE
FE-G
SX
D-FF
POST-CG
DOP
PB
PB-CG
SW12
COMP-SYNC
GND
SW5
SW9
SS-VSYNC
D-N
SKEW-SW
SH
GND
GND
GND
TU-A
TU-A
LIN-REC
LIN-PB
CONV-A
A-MUTE
SE
HF
HE
HR
GND
SW5
PB-HIFI
REC-HIFI
A-FF2
GND
TU-A
LIN-REC
LIN-PB
CONV-A
A-MUTE
GND
A-IN(R)
A-IN(L)
GND
A-OUT(R)
A-OUT(L)
PCB-HIFI
HU
SP
A-FF-2
GND
A-L-R
A-L-L
50HZ-H
HIFI-ENV
SW12
A-FF
EE
LIN-H
R-ACT
L-ACT
TP3Y
GND
TP3Z
YP3N
TP
GND
SW5
D-EXT
-30V
HS
ONLY FOR
HS-MS7
/ER
G
BB
L
R901
4.7
7W
CE
C904
400V
2200
C903
400V
2200
C902
250V
.1
MF
-AC
C928
400V
2200
C929
400V
2200
C930
400V
2200
D901
LB156
L901
ELF18D290CN
C901
250V
.1
MF
-AC
SA901
ERZ-C07DK471
F901
250V
T2.5A
L
G
BB
C905
400V
120μ
R902
100K
2W
MB
R903
68K
2W
MB
C906
200V
2.2μ
IC901
STR-D6009E
-0.2~-1V
-0.2~-1V
0~1V
-0.2~-1V
-0.2~-1V
C923
.068
MF
R906
820
1/4W
C909
4700
MF
D903
EH1
Q901
2SC4208A
-0.2~-1V
-0.2~-1V
-0.2~-1V
D904
RD3.0EB1
R908
1K
1/4W
D905
EU1Z
R909
1K
1/4W
C911
50V
100μ
D907
EU1Z
R910
56
2W
MB
R911
1.5K
1/4W
C912
16V
220μ
D906
EU1Z
R907
100
1/4W
C913
.33
TF
R904
47K
2W
MB
C907
630V
.068M-K
D902
EG01C
C908
2KV
150P-K
R905
100
3W
MB
C910
.047
TF
T901
350P53102
D908
RU4Z
C914
25V
4700μ
PC901
TLP621
D909
RU4Z
C915
35V
2200μ
D910
EU1
C916
50V
47μ
C917
50V
47μ
D911
EU1
D912
EK04
C918
10V
330μ

⚠

SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THEREFOR REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS.

DON'T DEGRADE THE SAFETY OF THE VCR THROUGH IMPROPER SERVICING.

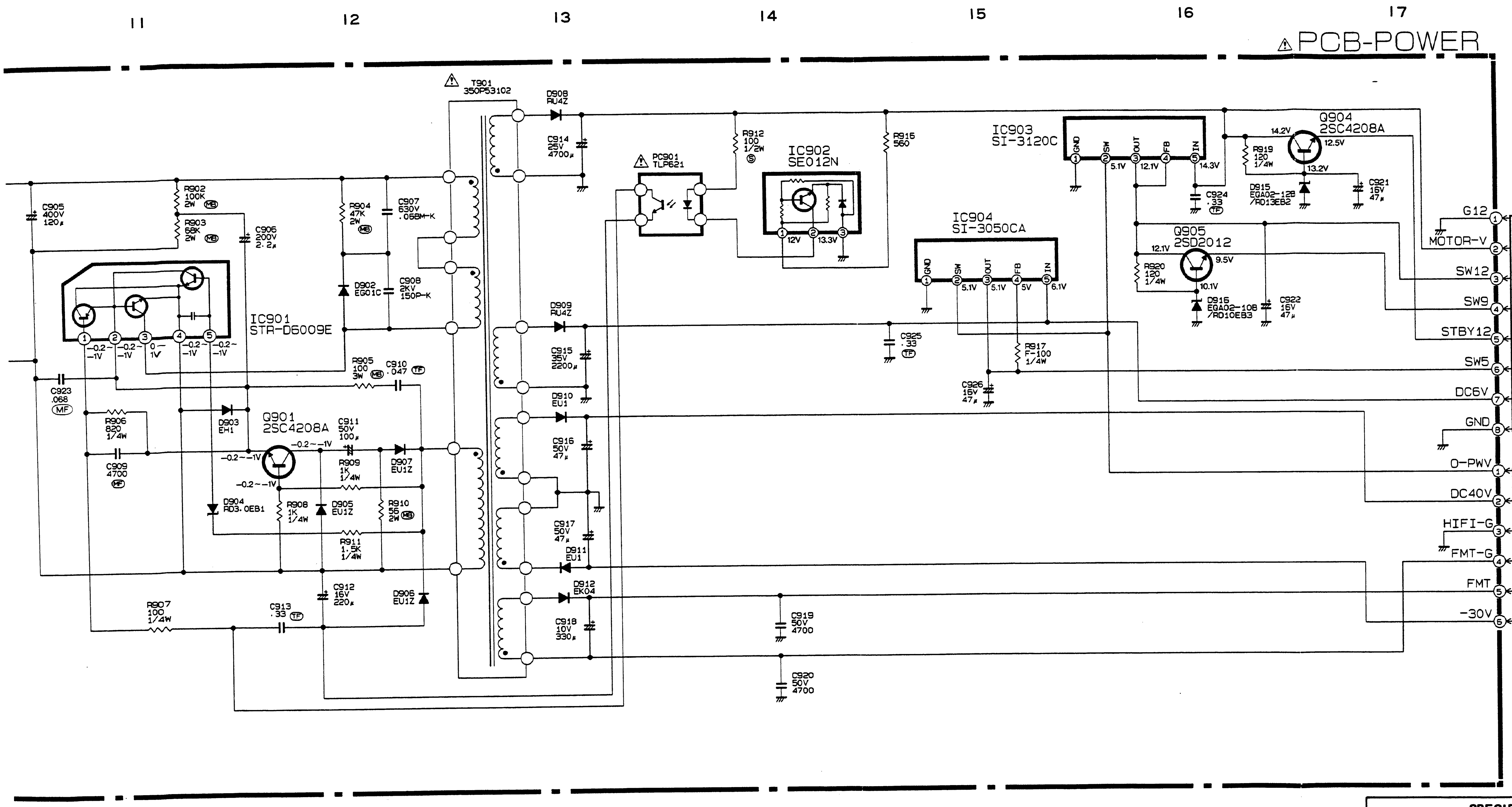
# SCHEMATIC DIAGRAM

**NOTE 1:**

1. DC voltages were measured from points indicated to the circuit ground with a digital voltmeter.
2. The voltages parenthesised are on SP recording mode. While those without parenthesised on SP play back mode.

**NOTE 2:**

1. The unit of resistance "ohm" entirely omitted.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistor, not specifically designated, is 1/4 watt except CHIP resistors.
3. Resistors, not specifically designated, are carbon resistors except CHIP resistors.
4. The marks of resistors are as follows.
   - (CE) : Cemented resistor
   - (MB) : Metal oxide film resistor (type B)
   - Ⓢ : Fixed composition resistors
   - Ⓦ : Wire wound resistor
   - Ⓜ : Metal film resistor
5. The tolerance of resistor value, not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, not specifically designated, is:
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capa
   - (ALM) : Alur
   - (MF) : Poly
   - (PP) : Poly
   - (TAN) : Tant
   - (SC) : Sem
   - (TF) : Twi
   - (NP) : Non
   - ⫩ : Elect
9. The DC working
   nated is: 50V


11
12
13
14
15
16
17
18
⚠PCB-POWER
⚠ T901 350P53102
C905 400V 120μ
R902 100K 2W MB
R903 68K 2W MB
C906 200V 2.2μ
R904 47K 2W MB
C907 630V .068M-K
D902 EG01C
C908 2KV 150P-K
IC901 STR-D6009E
-0.2~-1V
0~1V
R905 100 3W MB
C910 .047 TF
C923 .068 MF
R906 820 1/4W
C909 4700 MF
D903 EH1
Q901 2SC4208A
C911 50V 100μ
R909 1K 1/4W
D907 EU1Z
D904 RD3.0EB1
R908 1K 1/4W
D905 EU1Z
R910 56 2W MB
R911 1.5K 1/4W
C912 16V 220μ
D906 EU1Z
R907 100 1/4W
C913 .33 TF
D908 RU4Z
C914 25V 4700μ
D909 RU4Z
C915 35V 2200μ
D910 EU1
C916 50V 47μ
C917 50V 47μ
D911 EU1
D912 EK04
C918 10V 330μ
⚠ PC901 TLP621
R912 100 1/2W S
IC902 SE012N
12V
13.3V
R916 560
C925 .33 TF
C919 50V 4700
C920 50V 4700
IC903 SI-3120C
GND SW OUT FB IN
5.1V
12.1V
14.3V
C924 .33 TF
IC904 SI-3050CA
5.1V
5.1V
5V
6.1V
R917 F-100 1/4W
C926 16V 47μ
Q904 2SC4208A
14.2V
12.5V
13.2V
R919 120 1/4W
D915 EGA02-12B /RD13EB2
C921 16V 47μ
Q905 2SD2012
12.1V
9.5V
10.1V
R920 120 1/4W
D916 EGA02-10B /RD10EB3
C922 16V 47μ
G12
MOTOR-V
SW12
SW9
STBY12
SW5
DC6V
GND
PD
(MC) PCB-CONTROL
CD
O-PWV
DC40V
HIFI-G
FMT-G
FMT
-30V
PZ
(MC) PCB-CONTROL
CZ

## TIC DIAGRAM

were measured from points indicated to the cir-
vith a digital voltmeter.
parenthesised are on SP recording mode.
vithout parenthesised on SP play back mode.

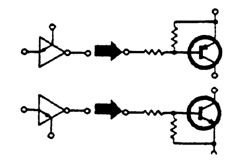
esistance "ohm" entirely omitted.
K = 1000 ohms
M = 1000K ohms.

of resistor, not specifically designated, is 1/4
CHIP resistors.
ot specifically designated, are carbon resistors
resistors.

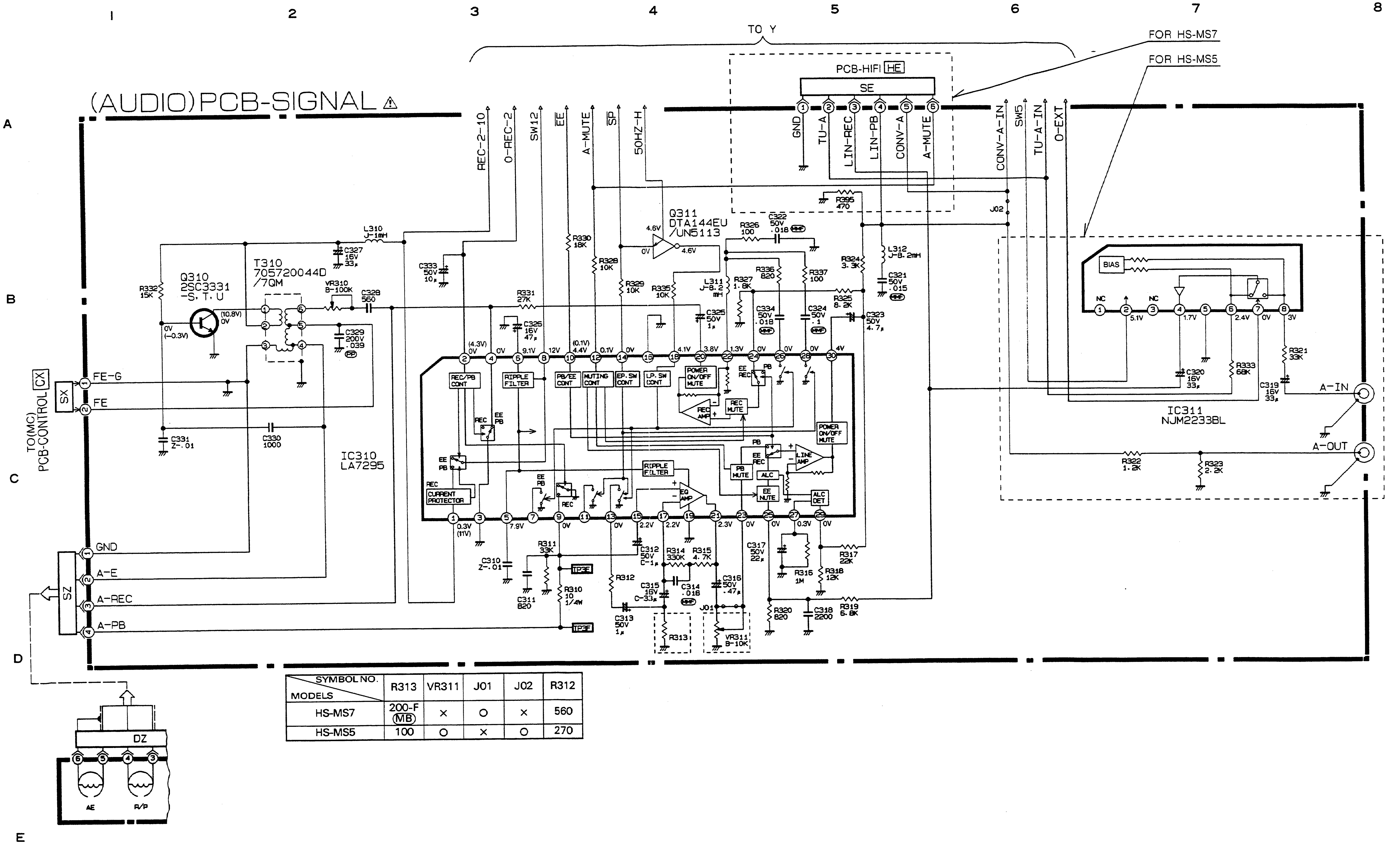
4. The marks of resistors are as follows.
   - CE : Cemented resistor
   - MB : Metal oxide film resistor (type B)
   - Ⓢ : Fixed composition resistors
   - Ⓦ : Wire wound resistor
   - Ⓜ : Metal film resistor
5. The tolerance of resistor value, not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, not specifically designated, is:
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - ALM : Aluminus electrolytic capacitor
   - MF : Polyester capacitor
   - PP : Polypropylene film capacitor
   - TAN : Tantalum capacitor
   - SC : Semiconductor Ceramic Capacitors
   - TF : Twin film capacitor
   - NP : Non polarized electrolytic capacitor
   - ╪ : Electrolytic capacitor
9. The DC working voltage of capacitor, not specifically designated is: 50V
10. The tolerance of capacitor value, not specifically designated is: ±10%
    and J = ±5% K = ±10% M = ±20% P = $^{+100\%}_{-\ 0\%}$
    C = ±0.25PF D = ±0.5PF F = ±1PF Z = $^{+80\%}_{-20\%}$ N=±30%
11. Ceramic capacitors with the marks RH, UJ, SL, etc. are temperature compensating types.

### SPECIFIC SYMBOL

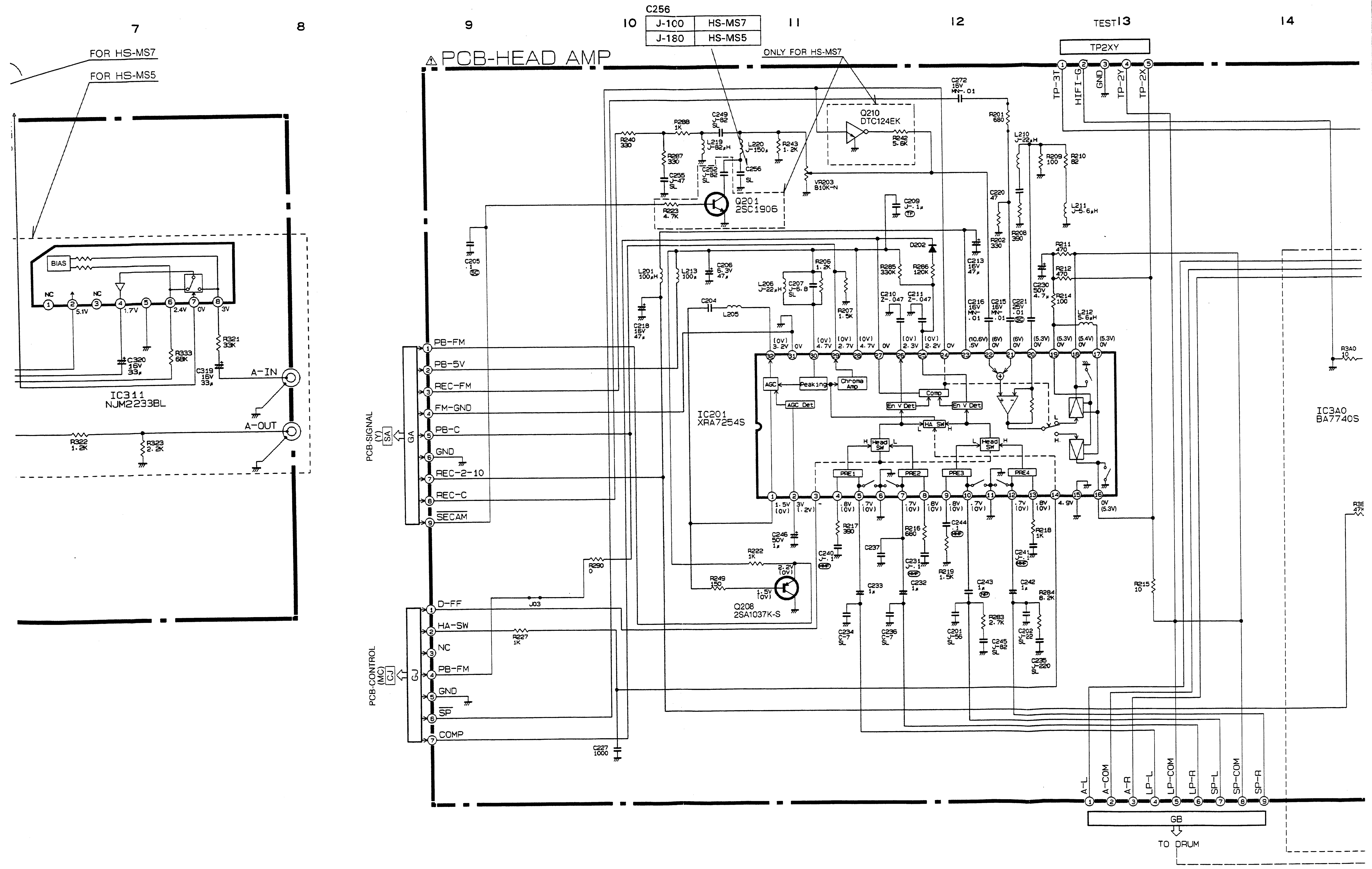
| | | | |
|---|---|---|---|
| ⊣◀ | Zener Diode | ⊣▯⊢ | Crystal unit |
| ⊣◀◀ | Varicap | ⊣◀ | LE Diode |
| ⊖ | Posistor | ⊣◀ | Photo Diode |
| ⊖ | Thermistor | ⊟ | Ceramic filter |
| ⊖ | Fusible Resistor | | |

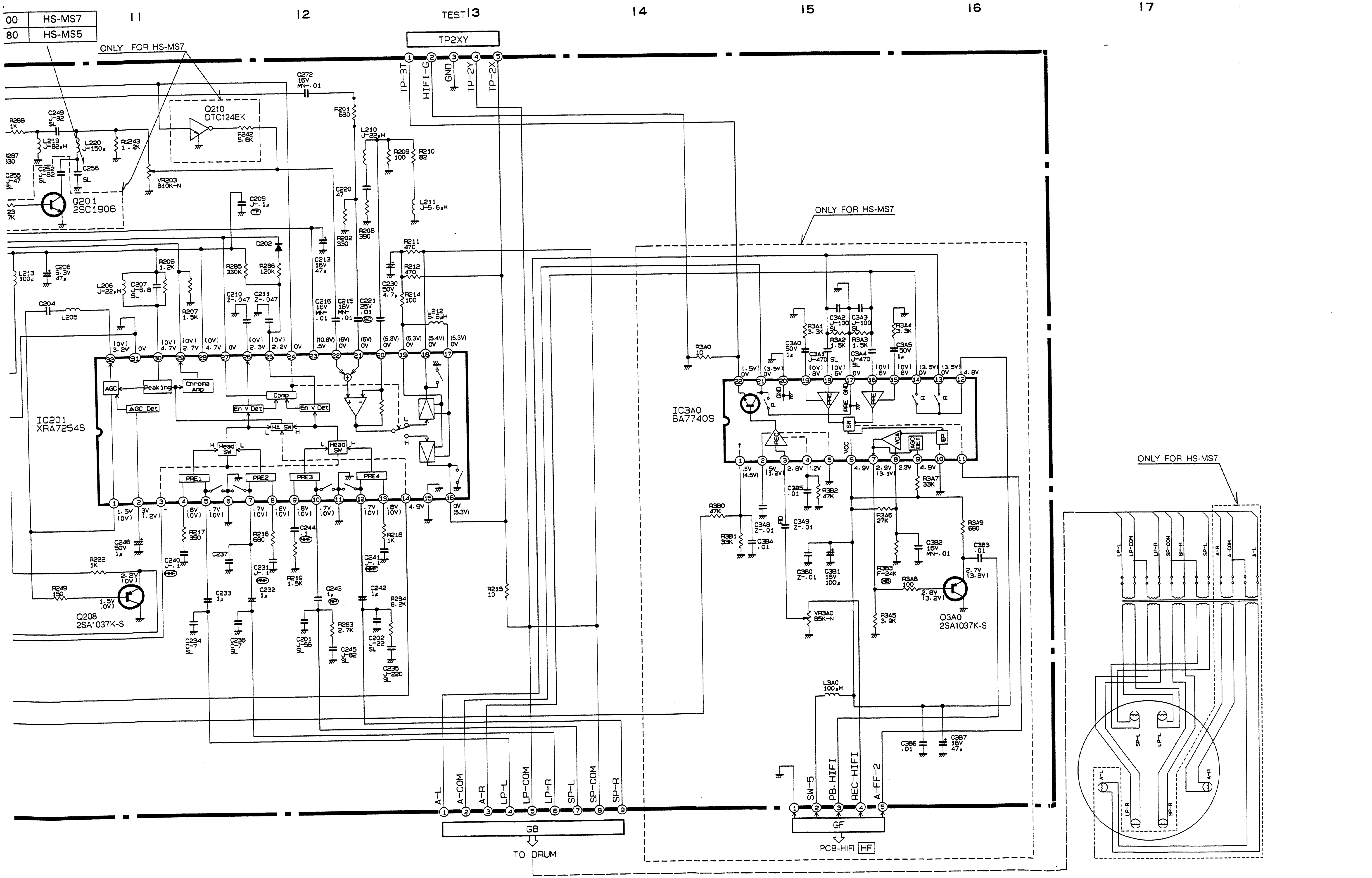

PNP DIGITAL TRANSISTOR
NPN DIGITAL TRANSISTOR

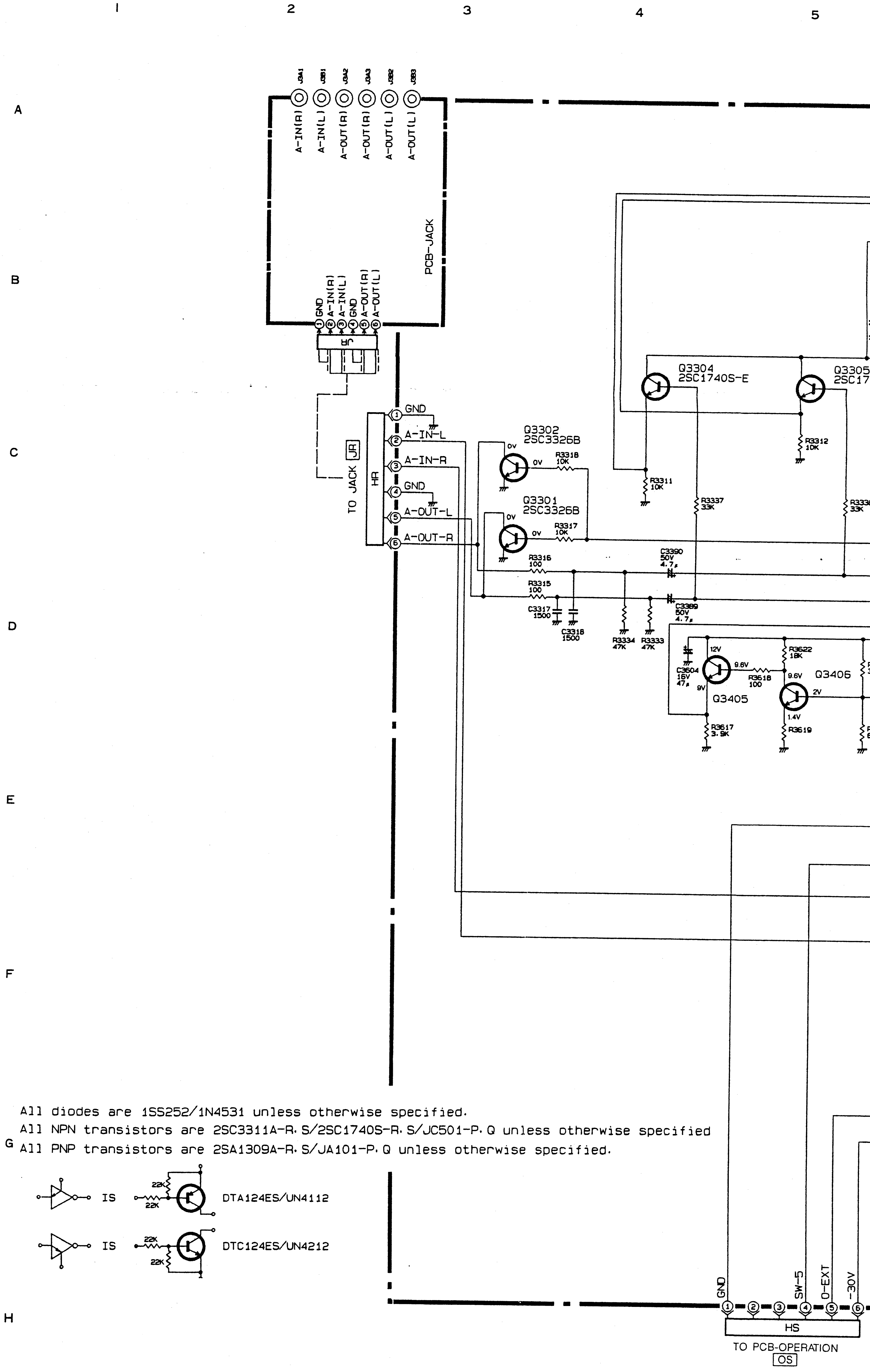
This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.


1
2
3
4
5
6
7
8
A
B
C
D
E
(AUDIO) PCB-SIGNAL ⚠
TO Y
FOR HS-MS7
FOR HS-MS5
PCB-HIFI HE
SE
GND
TU-A
LIN-REC
LIN-PB
CONV-A
A-MUTE
REC-2-10
0-REC-2
SW12
EE
A-MUTE
SP
50HZ-H
CONV-A-IN
SW5
TU-A-IN
0-EXT
J02
R395 470
Q311 DTA144EU /UN5113
4.6V
0V
4.6V
L310 J-1mH
C327 16V 33μ
T310 705720044D /7QM
Q310 2SC3331 -S.T.U
R332 15K
(10.8V) 0V
0V (-0.3V)
VR310 B-100K
C328 560
C329 200V .039 PP
C333 50V 10μ
R330 18K
R328 10K
R329 10K
R335 10K
R331 27K
C325 16V 47μ
C325 50V 1μ
R326 100
C322 50V .018 MMF
L311 J-8.2 mH
R327 1.8K
R336 820
R337 100
C334 50V .018 MMF
C324 50V .1 MMF
R324 3.3K
R325 8.2K
L312 J-8.2mH
C321 50V .015 MMF
C323 50V 4.7μ
TO(MC) PCB-CONTROL CX
SX
FE-G
FE
C331 Z-.01
C330 1000
IC310 LA7295
REC/PB CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP. SW CONT
LP. SW CONT
POWER ON/OFF MUTE
REC AMP
REC MUTE
EE PB
REC
CURRENT PROTECTOR
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
EE MUTE
LINE AMP
ALC DET
POWER ON/OFF MUTE
(4.3V) 0V
0V
9.1V
12V
(0.1V) 4.4V
0.1V
0V
4.1V
3.8V
1.3V
0V
0V
4V
0.3V (11V)
7.9V
0V
0V
2.2V
2.2V
2.3V
0V
0V
0.3V
0V
C310 Z-.01
R311 33K
C311 820
R310 10 1/4W
TP3E
TP3F
R312
C312 50V C-1μ
R314 330K
R315 4.7K
C315 16V C-33μ
C314 .018 MMF
C316 50V .47μ
C313 50V 1μ
J01
R313
VR311 B-10K
C317 50V 22μ
R316 1M
R318 12K
R317 22K
R319 6.8K
R320 820
C318 2200
GND
A-E
A-REC
A-PB
SZ
DZ
AE
R/P
BIAS
NC
NC
5.1V
1.7V
2.4V
0V
3V
C320 16V 33μ
R333 68K
R321 33K
C319 16V 33μ
IC311 NJM2233BL
A-IN
A-OUT
R322 1.2K
R323 2.2K

| SYMBOL NO. / MODELS | R313 | VR311 | J01 | J02 | R312 |
|---|---|---|---|---|---|
| HS-MS7 | 200-F (MB) | × | ○ | × | 560 |
| HS-MS5 | 100 | ○ | × | ○ | 270 |


7
8
9
10
11
12
TEST 13
14
C256
J-100 HS-MS7
J-180 HS-MS5
FOR HS-MS7
FOR HS-MS5
PCB-HEAD AMP
ONLY FOR HS-MS7
TP2XY
TP-3T
HIFI-G
GND
TP-2Y
TP-2X
Q210 DTC124EK
Q201 2SC1906
Q208 2SA1037K-S
VR203 B10K-N
IC201 XRA7254S
IC311 NJM2233BL
IC3A0 BA7740S
BIAS
A-IN
A-OUT
AGC
AGC Det
Peaking
Chroma Amp
Comp
En V Det
HA SW
Head SW
PRE1
PRE2
PRE3
PRE4
PCB-SIGNAL (Y) SA
GA
PB-FM
PB-5V
REC-FM
FM-GND
PB-C
GND
REC-2-10
REC-C
SECAM
PCB-CONTROL (MC) CJ
GJ
D-FF
HA-SW
NC
PB-FM
GND
SP
COMP
J03
A-L
A-COM
A-R
LP-L
LP-COM
LP-R
SP-L
SP-COM
SP-R
GB
TO DRUM

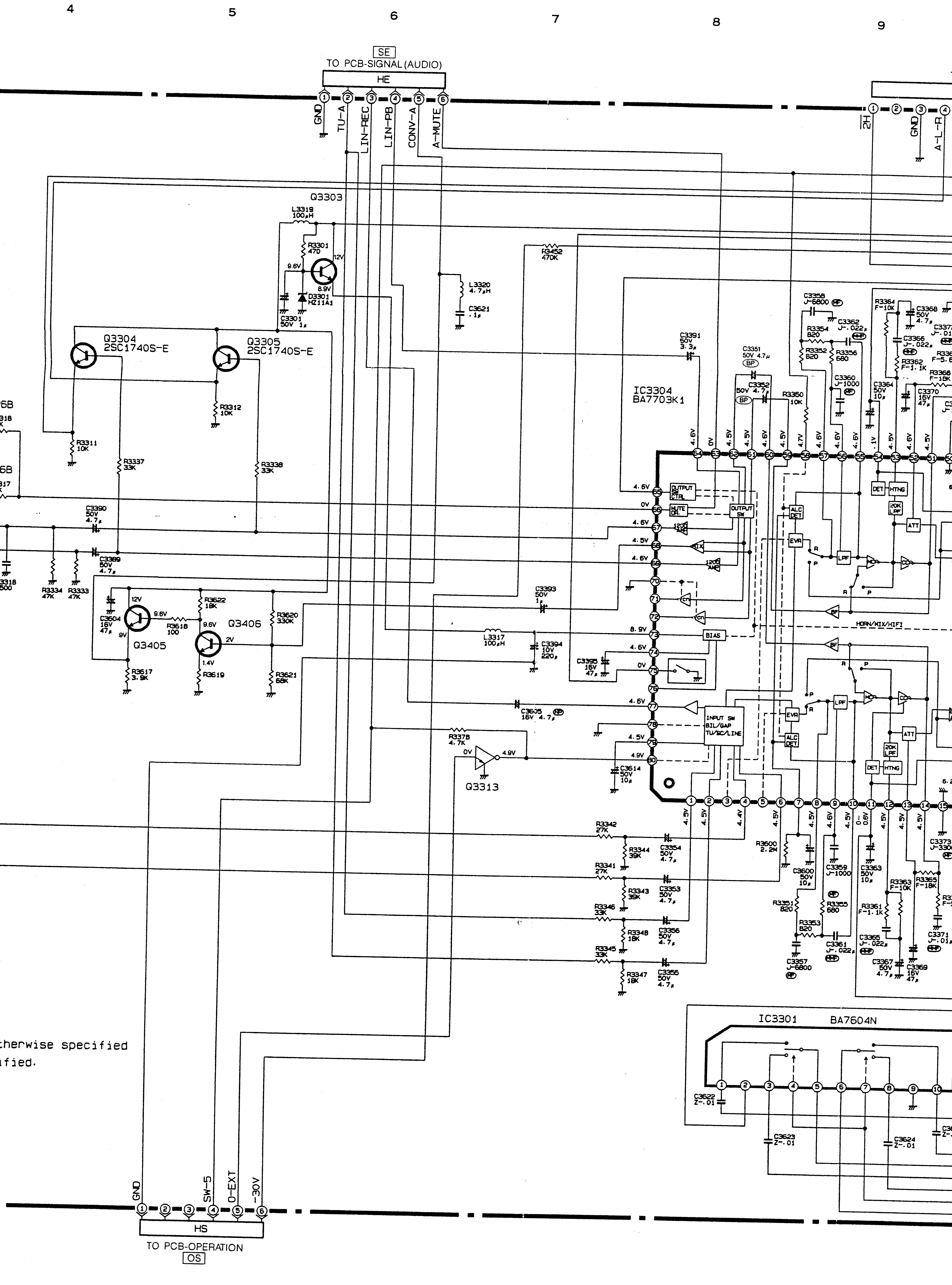

00 HS-MS7
80 HS-MS5
11
12
TEST 13
14
15
16
17
TP2XY
TP-3T
HIFI-G
GND
TP-2Y
TP-2X
ONLY FOR HS-MS7
Q210 DTC124EK
R242 5.6K
C272 16V MN-.01
R201 680
R288 1K
C249 J-82 SL
L219 J-82μH
L220 J-150μ
R243 1.2K
C256 SL
VR203 B10K-N
Q201 2SC1906
L210 J-22μH
R209 100
R210 82
L211 J-5.6μH
C220 47
R202 330
R208 390
C209 J-.1μ
D202
R285 330K
R286 120K
C213 16V 47μ
R206 1.2K
L213 100μ
C206 6.3V 47μ
L206 J-22μH
C207 J-6.8 SL
R207 1.5K
C210 Z-.047
C211 Z-.047
C216 16V MN-.01
C215 16V MN-.01
C221 25V .01
C230 50V 4.7μ
R211 470
R212 470
R214 100
L212 5.6μH
C204
L205
IC201 XRA7254S
AGC
Peaking
Chroma Amp
AGC Det
En V Det
Comp
HA SW
Head SW
PRE1
PRE2
PRE3
PRE4
C246 50V 1μ
R222 1K
R249 150
Q208 2SA1037K-S
R217 390
C240 J-.1
C237
R216 680
C231 J-.1
C233 1μ
C232 1μ
C234 C-7
C236 C-7
C244 .1
R219 1.5K
C243 1μ
C201 J-56 SL
R283 2.7K
C245 J-82 SL
C241 J-.1
C242 1μ
R284 8.2K
R218 1K
C202 J-22 SL
C235 J-220 SL
R215 10
R3A0 10
IC3A0 BA7740S
PRE
SW
REC
VCA
AGC DET
EP
R3A1 3.3K
C3A2 J-100 SL
C3A3 J-100 SL
R3A2 1.5K
R3A3 1.5K
C3A0 50V 1μ
C3A1 J-470 SL
C3A4 J-470 SL
R3A4 3.3K
C3A5 50V 1μ
R380 47K
R381 33K
C3A8 Z-.01
C384 .01
C385 .01
R382 47K
C3A9 Z-.01
C380 Z-.01
C381 16V 100μ
R3A6 27K
C382 16V MN-.01
R383 F-24K
R3A8 100
R3A7 33K
R3A9 680
C383 .01
VR3A0 B5K-N
R3A5 3.9K
Q3A0 2SA1037K-S
L3A0 100μH
C386 .01
C387 16V 47μ
A-L
A-COM
A-R
LP-L
LP-COM
LP-R
SP-L
SP-COM
SP-R
GB
TO DRUM
SW-5
PB.HIFI
REC-HIFI
A-FF-2
GF
PCB-HIFI HF
ONLY FOR HS-MS7


1
2
3
4
5
A
B
C
D
E
F
G
H
J3A1
J3B1
J3A2
J3A3
J3B2
J3B3
A-IN(R)
A-IN(L)
A-OUT(R)
A-OUT(R)
A-OUT(L)
A-OUT(L)
PCB-JACK
①GND
②A-IN(R)
③A-IN(L)
④GND
⑤A-OUT(R)
⑥A-OUT(L)
JR
TO JACK JR
HR
①GND
②A-IN-L
③A-IN-R
④GND
⑤A-OUT-L
⑥A-OUT-R
Q3302
2SC3326B
Q3301
2SC3326B
0V
R3318 10K
R3317 10K
R3316 100
R3315 100
C3317 1500
C3318 1500
R3334 47K
R3333 47K
C3390 50V 4.7μ
C3389 50V 4.7μ
Q3304
2SC1740S-E
Q3305
2SC17
R3311 10K
R3312 10K
R3337 33K
R333 33K
C3604 16V 47μ
12V
9V
9.6V
2V
1.4V
R3622 18K
R3618 100
R3617 3.9K
R3619
Q3405
Q3406
IS
22K
DTA124ES/UN4112
DTC124ES/UN4212
GND
SW-5
O-EXT
-30V
①
②
③
④
⑤
⑥
HS
TO PCB-OPERATION
OS

All diodes are 1SS252/1N4531 unless otherwise specified.

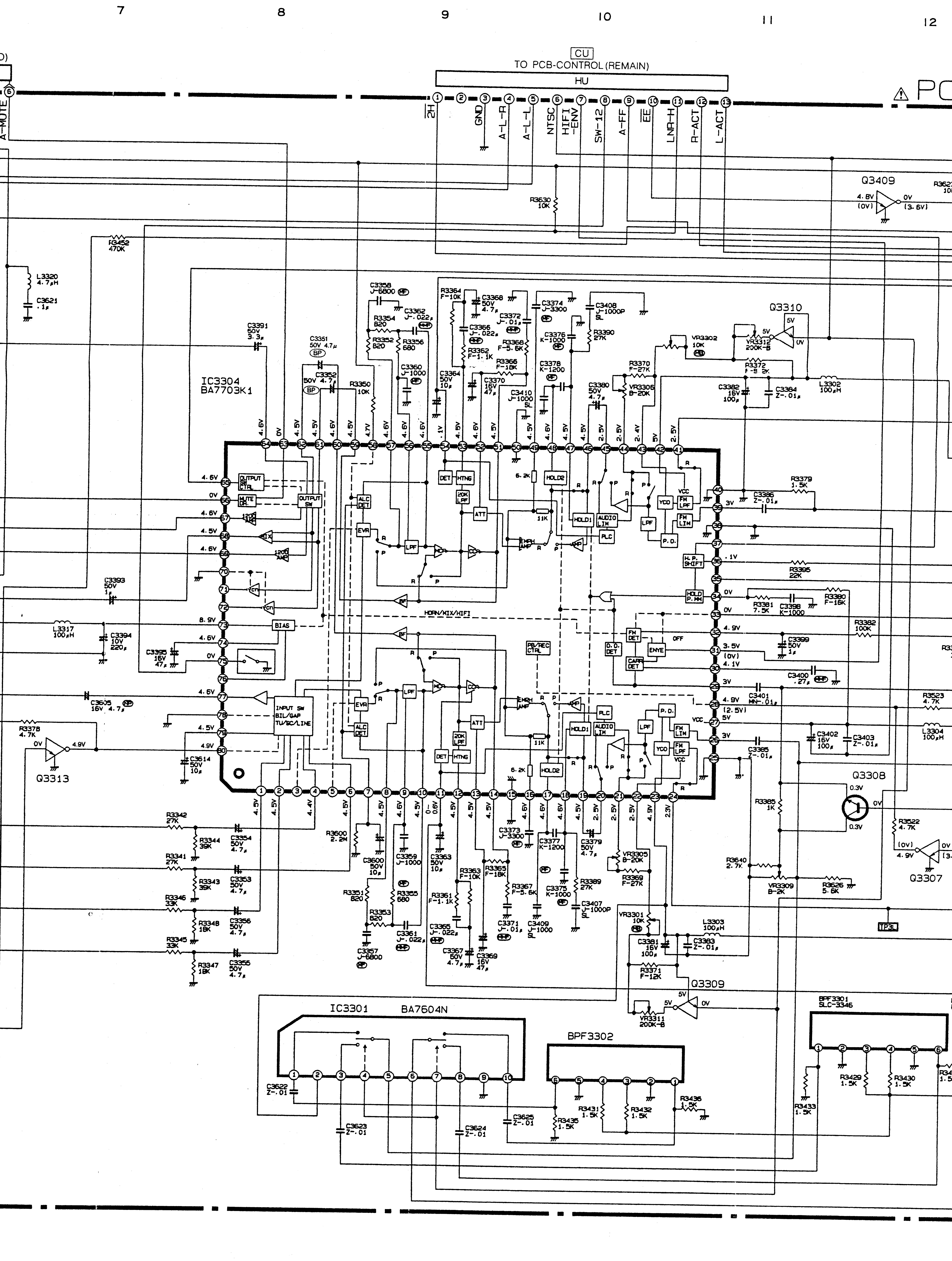
All NPN transistors are 2SC3311A-R.S/2SC1740S-R.S/JC501-P.Q unless otherwise specified

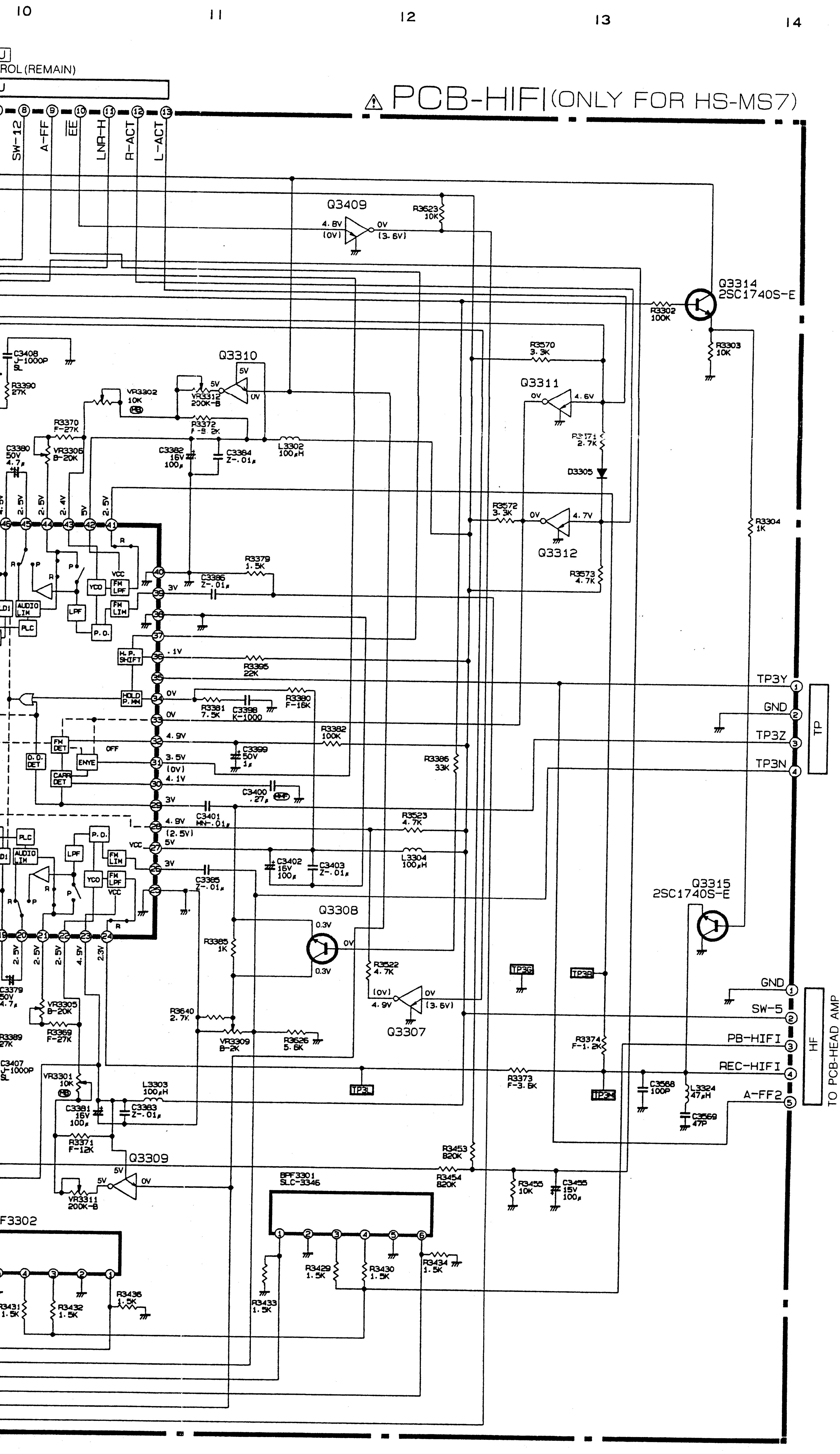
All PNP transistors are 2SA1309A-R.S/JA101-P.Q unless otherwise specified.


4
5
6
7
8
9
SE
TO PCB-SIGNAL (AUDIO)
HE
GND
TU-A
LIN-REC
LIN-PB
CONV-A
A-MUTE
2H
GND
A-L-R
Q3303
L3319 100μH
R3301 470
12V
9.6V
8.9V
D3301 HZ11A1
C3301 50V 1μ
L3320 4.7μH
C3621 .1μ
Q3304 2SC1740S-E
Q3305 2SC1740S-E
R3312 10K
R3311 10K
R3337 33K
R3338 33K
R3452 470K
C3391 50V 3.3μ
C3351 50V 4.7μ BP
C3352 50V 4.7μ BP
IC3304 BA7703K1
R3350 10K
C3358 J-6800
C3362 J-.022μ
R3354 820
R3352 820
R3356 680
C3360 J-1000
R3364 F-10K
C3368 50V 4.7μ
C3366 J-.022μ
R3362 F-1.1K
R3366 F-18K
C3364 50V 10μ
C3370 16V 47μ
C3390 50V 4.7μ
C3389 50V 4.7μ
R3334 47K
R3333 47K
OUTPUT SW CTRL
MUTE DR.
OUTPUT SW
MIX
12DB AMP
VCA
ALC DET
EVR
LPF
NCR
CCA
DET
HTNG
20K LPF
ATT
BF
HORN/MIX/HIFI
BIAS
INPUT SW BIL/GAP TU/SC/LINE
C3604 16V 47μ
Q3405
Q3406
R3622 18K
R3618 100
R3620 330K
R3617 3.9K
R3619
R3621 68K
C3393 50V 1μ
L3317 100μH
C3394 10V 220μ
C3395 16V 47μ
C3605 16V 4.7μ NP
R3378 4.7K
Q3313
C3614 50V 10μ
R3342 27K
R3344 39K
C3354 50V 4.7μ
R3341 27K
R3343 39K
C3353 50V 4.7μ
R3346 33K
R3348 18K
C3356 50V 4.7μ
R3345 33K
R3347 18K
C3355 50V 4.7μ
R3600 2.2M
C3600 50V 10μ
C3359 J-1000
C3363 50V 10μ
R3351 820
R3355 680
R3353 820
C3361 J-.022μ
C3357 J-6800
R3363 F-10K
R3365 F-18K
R3361 F-1.1K
C3365 J-.022μ
C3367 50V 4.7μ
C3369 16V 47μ
C3371 J-.01μ
C3373 J-3300
IC3301 BA7604N
C3622 Z-.01
C3623 Z-.01
C3624 Z-.01
GND
SW-5
O-EXT
-30V
HS
TO PCB-OPERATION
OS

therwise specified

ified.


7
8
9
10
11
12
CU
TO PCB-CONTROL (REMAIN)
HU
2H
GND
A-L-R
A-L-L
NTSC
HIFI -ENV
SW-12
A-FF
EE
LNR-H
R-ACT
L-ACT
A-MUTE
Q3409
4.8V (0V)
0V (3.6V)
R3630 10K
R3452 470K
L3320 4.7μH
C3621 .1μ
C3391 50V 3.3μ
C3351 50V 4.7μ BP
C3352 50V 4.7μ BP
C3358 J-6800 MF
C3362 J-.022μ MMF
R3354 820
R3352 820
R3356 680
R3350 10K
C3360 J-1000 MF
R3364 F-10K
C3368 50V 4.7μ
C3366 J-.022μ MMF
R3362 F-1.1K
C3372 J-.01μ MMF
R3368 F-5.6K
R3366 F-18K
C3364 50V 10μ
C3370 16V 47μ
C3410 J-1000 SL
C3374 J-3300 MF
C3376 K-1000 MF
C3378 K-1200 MF
C3408 J-1000P SL
R3390 27K
C3380 50V 4.7μ
R3370 F-27K
VR3306 B-20K
VR3302 10K MB
Q3310
5V
0V
VR3312 200K-B
R3372 F-9.2K
C3382 16V 100μ
C3384 Z-.01μ
L3302 100μH
IC3304 BA7703K1
OUTPUT SW CTRL
MUTE CRL
OUTPUT SW
1200 AMP
MIX
ALC DET
EVR
LPF
MCA
CCA
DET
HTNG
20K LPF
ATT
EMPH AMP
HOLD2
HOLD1
AUDIO LIM
PLC
LPF
VCO
FM LPF
FM LIM
P.D.
H.P. SHIFT
HOLD P.MN
FM DET
ENVE
CARR DET
D.O. DET
PB/REC CTRL
BF
HORN/MIX/HIFI
BIAS
VCA
INPUT SW BIL/GAP TU/SC/LINE
11K
6.2K
R3379 1.5K
C3386 Z-.01μ
R3395 22K
R3381 7.5K
C3398 K-1000
R3380 F-16K
R3382 100K
C3399 50V 1μ
OFF
C3400 .27μ MMF
C3401 MN-.01μ
R3523 4.7K
C3402 16V 100μ
C3403 Z-.01μ
L3304 100μH
C3385 Z-.01μ
Q3308
0.3V
R3385 1K
R3522 4.7K
(0V) 4.9V
Q3307
R3640 2.7K
VR3309 B-2K
R3626 5.6K
TP3L
C3393 50V 1μ
L3317 100μH
C3394 10V 220μ
C3395 16V 47μ
C3605 16V 4.7μ NP
R3378 4.7K
Q3313
4.9V
C3614 50V 10μ
R3342 27K
R3344 39K
C3354 50V 4.7μ
R3341 27K
R3343 39K
C3353 50V 4.7μ
R3346 33K
R3348 18K
C3356 50V 4.7μ
R3345 33K
R3347 18K
C3355 50V 4.7μ
R3600 2.2M
C3600 50V 10μ
C3359 J-1000 MF
C3363 50V 10μ
R3351 820
R3353 820
R3355 680
C3357 J-6800 MF
C3361 J-.022μ MMF
R3363 F-10K
R3365 F-18K
R3361 F-1.1K
C3365 J-.022μ MMF
C3367 50V 4.7μ
C3369 16V 47μ
C3373 J-3300 MF
C3377 K-1200
R3367 F-5.6K
C3371 J-.01μ MMF
C3409 J-1000 SL
C3375 K-1000 MF
C3379 50V 4.7μ
R3389 27K
C3407 J-1000P SL
VR3305 B-20K
R3369 F-27K
VR3301 10K MB
L3303 100μH
C3381 16V 100μ
C3383 Z-.01μ
R3371 F-12K
Q3309
VR3311 200K-B
IC3301 BA7604N
BPF3302
BPF3301 SLC-3346
C3622 Z-.01
C3623 Z-.01
C3624 Z-.01
C3625 Z-.01
R3435 1.5K
R3431 1.5K
R3432 1.5K
R3436 1.5K
R3429 1.5K
R3430 1.5K
R3433 1.5K
PC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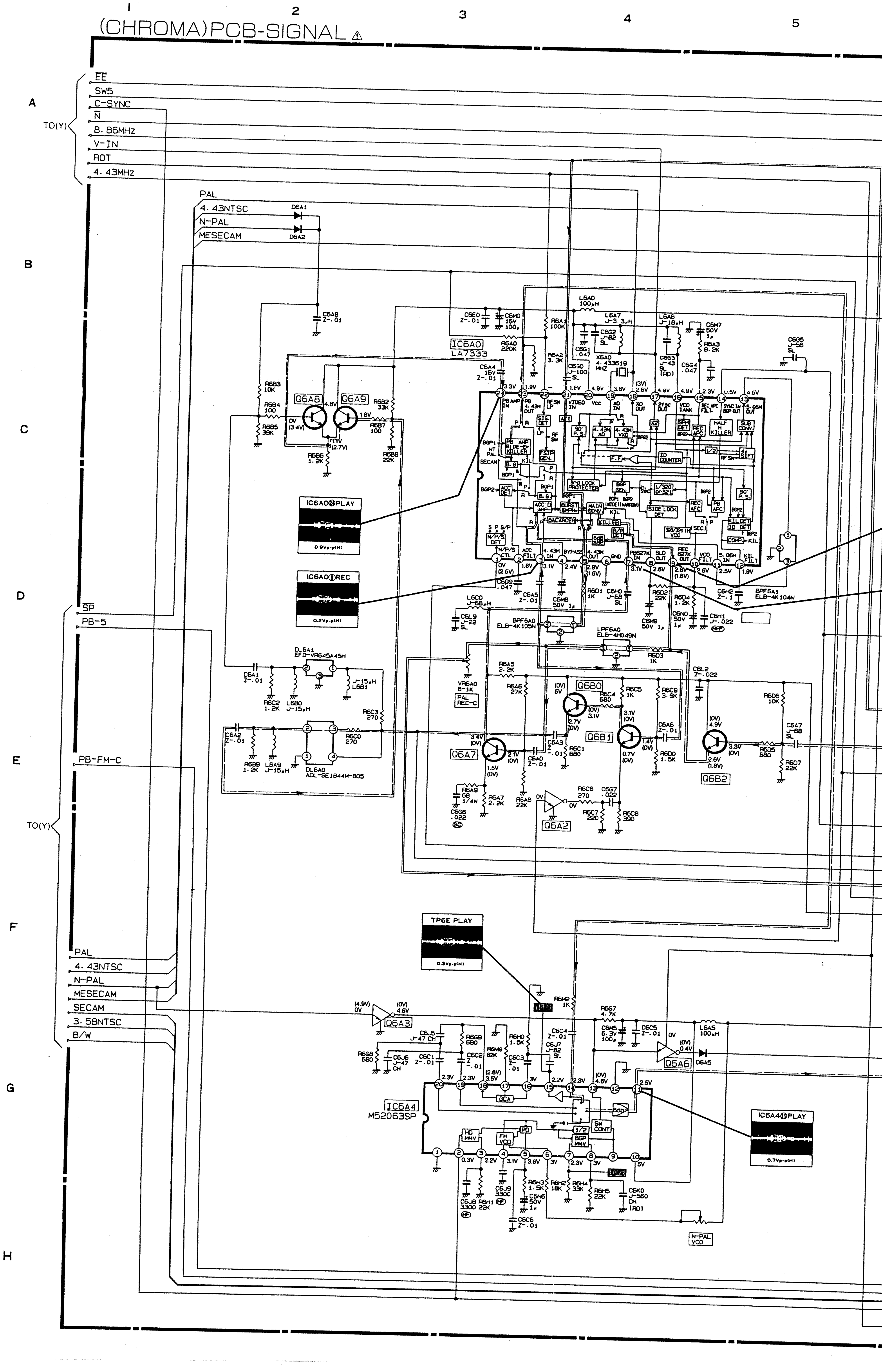
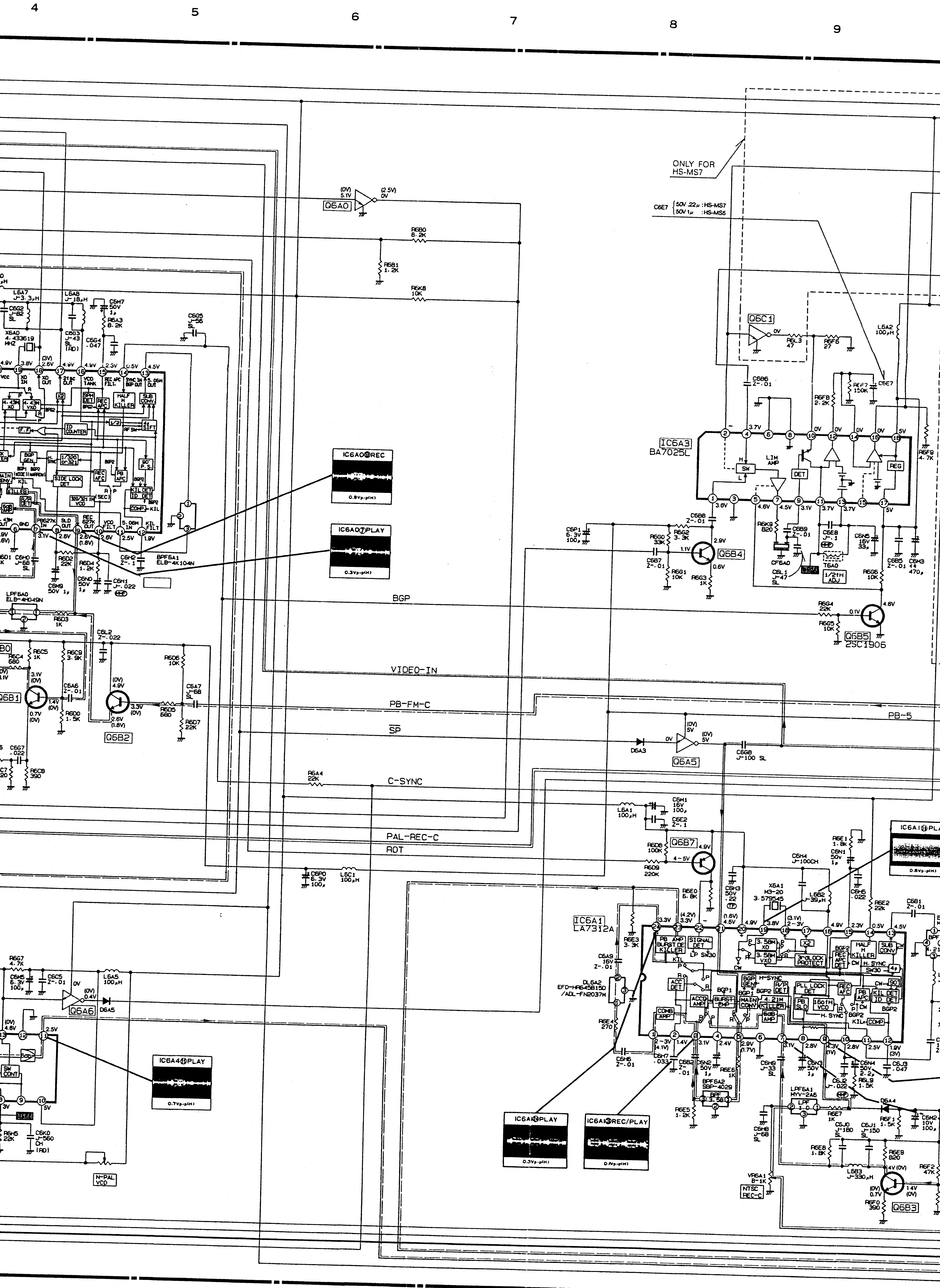
14
⚠ PCB-HIFI (ONLY FOR HS-MS7)
ROL (REMAIN)
SW-12
A-FF
EE
LNR-H
R-ACT
L-ACT
Q3409
4.8V
(0V)
0V
(3.6V)
R3623 10K
Q3314 2SC1740S-E
R3302 100K
R3303 10K
C3408 J-1000P SL
R3390 27K
Q3310
5V
0V
VR3302 10K
VR3312 200K-B
R3370 F-27K
R3372 F-5.2K
VR3306 B-20K
C3380 50V 4.7μ
C3382 16V 100μ
C3384 Z-.01μ
L3302 100μH
R3570 3.3K
Q3311
0V
4.6V
R3571 2.7K
D3305
R3572 3.3K
0V
4.7V
Q3312
R3573 4.7K
R3304 1K
R3379 1.5K
C3386 Z-.01μ
3V
AUDIO LIM
PLC
LPF
P.D.
VCO
FM LPF
FM LIM
VCC
H.P. SHIFT
.1V
R3395 22K
HOLD P.MK
R3381 7.5K
C3398 K-1000
R3380 F-16K
R3382 100K
FM DET
ENVE
D.O. DET
CARR DET
OFF
4.9V
3.5V
(0V)
4.1V
C3399 50V 1μ
C3400 .27μ
R3386 33K
C3401 MN-.01μ
(2.5V)
R3523 4.7K
C3402 16V 100μ
C3403 Z-.01μ
L3304 100μH
C3385 Z-.01μ
TP3Y
GND
TP3Z
TP3N
TP
Q3315 2SC1740S-E
Q3308
0.3V
R3385 1K
R3522 4.7K
(0V)
4.9V
(3.6V)
Q3307
TP3G
TP3B
GND
SW-5
PB-HIFI
REC-HIFI
A-FF2
HF
TO PCB-HEAD AMP GF
C3379 50V 4.7μ
VR3305 B-20K
R3369 F-27K
R3389 27K
C3407 J-1000P SL
R3640 2.7K
VR3309 B-2K
R3626 5.6K
R3374 F-1.2K
R3373 F-3.6K
TP3L
TP3M
C3568 100P
L3324 47μH
C3569 47P
VR3301 10K
C3381 16V 100μ
C3383 Z-.01μ
L3303 100μH
R3371 F-12K
Q3309
VR3311 200K-B
R3453 820K
R3454 820K
R3455 10K
C3455 15V 100μ
BPF3301 SLC-3346
F3302
R3429 1.5K
R3430 1.5K
R3434 1.5K
R3433 1.5K
R3431 1.5K
R3432 1.5K
R3436 1.5K

# (CHROMA)PCB-SIGNAL ⚠


1
2
3
4
5
A
B
C
D
E
F
G
H
TO(Y)
EE
SW5
C-SYNC
N
8.86MHz
V-IN
ROT
4.43MHz
PAL
4.43NTSC
N-PAL
MESECAM
D6A1
D6A2
C6A8 Z-.01
C6E0 Z-.01
C6M0 15V 100μ
R6A1 100K
R6A0 220K
L6A0 100μH
L6A7 J-3.3μH
L6A8 J-18μH
C6M7 50V 1μ
R6A3 8.2K
C6G1 .047
C6G2 J-82 SL
R6A2 3.3K
X6A0 4.433619 MHz
C6G3 J-43 SL (RD)
C6G4 .047
C6G5 J-56 SL
IC6A0
LA7333
C6A4 16V Z-.01
C6G0 J-100 SL
R6B3 10K
R6B4 100
R6B5 39K
Q6A8
Q6A9
R6B2 33K
R6B7 100
R6B6 1.2K
R6B8 22K
PB AMP IN
PB 4.43M OUT
RF SW LP
VIDEO IN
VCC
XO IN
XO OUT
2fsc OUT
VCO TANK
REC APC FILT.
SYNC IN BGP OUT
5.06M OUT
SIG DET
ATT
90° P.S.
4.43M XO
4.43M VXO
X2
SPH DET
REC APC
HALF H KILLER
SUB CONV.
PB AMP DE-E KILLER
FSIP GEN.
F.F
ID COUNTER
1/2
4φ SIFT
B.G
3rd LOCK PROTECTER
BGP GEN.
1/320 or 321
90° P.S.
ACC DET
ACC AMP
BURST EMPH.
MAIN CONV.
SIDE LOCK DET
REC AFC
PB APC
BALANCER
KILLER
320/321 fH VCO
KIL DET
ID DET
N/P/S DET
SUB AMP
R/B DET
COMP
N/P/S CTL
ACC FILT
4.43M IN
BYPASS
4.43M OUT
GND
PB627K IN
SLD OUT
REC 627K OUT
VCO FILT
5.06M IN
KIL FILT
IC6A0㉔PLAY
0.9Vp-p(H)
IC6A0③REC
0.2Vp-p(H)
C6G9 .047
C6A5 Z-.01
C6M8 50V 1μ
R6D1 1K
C6H0 J-68 SL
R6D2 22K
R6D4 1.2K
C6M9 50V 1μ
C6N0 50V 1μ
C6H1 J-.022
C6H2 Z-.1
BPF6A1 ELB-4K104N
L6C0 J-68μH
C6L9 J-22 SL
BPF6A0 ELB-4K105N
LPF6A0 ELB-4H049N
R6D3 1K
SP
PB-5
DL6A1 EFD-VR645A45H
C6A1 Z-.01
R6C2 1.2K
L6B0 J-15μH
J-15μH L6B1
R6C3 270
C6A2 Z-.01
R6C0 270
R6B9 1.2K
L6A9 J-15μH
DL6A0 ADL-SE1844M-B05
VR6A0 B-1K
PAL REC-C
R6A5 2.2K
R6A6 27K
Q6B0
R6C4 680
R6C5 1K
R6C9 3.9K
C6L2 Z-.022
R6D6 10K
Q6A7
C6A3 Z-.01
R6C1 680
Q6B1
C6A6 Z-.01
R6D0 1.5K
Q6B2
R6D5 680
C6A7 J-68 SL
R6D7 22K
R6A9 68 1/4W
R6A7 2.2K
C6G6 .022
C6A0 Z-.01
R6A8 22K
Q6A2
R6C6 270
C6G7 .022
R6C7 220
R6C8 390
PB-FM-C
TP6E PLAY
0.3Vp-p(H)
SECAM
3.58NTSC
B/W
Q6A3
R6M2 1K
R6G7 4.7K
C6M5 6.3V 100μ
C6C5 Z-.01
L6A5 100μH
Q6A6
D6A5
C6J5 J-47 CH
R6G9 680
R6G8 680
C6J6 J-47 CH
C6C1 Z-.01
C6C2 Z-.01
R6H0 1.5K
R6M9 82K
C6C3 Z-.01
C6C4 Z-.01
C6J7 J-82 SL
IC6A4
M52063SP
GCA
5dB
SW CONT
1/2 BGP MMV
HD MMV
FH VCO
PD
IC6A4⑪PLAY
0.7Vp-p(H)
C6J8 3300
R6H1 22K
C6J9 3300
R6H3 1.5K
C6N6 50V 1μ
C6C6 Z-.01
R6H2 18K
R6H4 33K
R6H5 22K
C6K0 J-560 CH (RD)
N-PAL VCO

4
5
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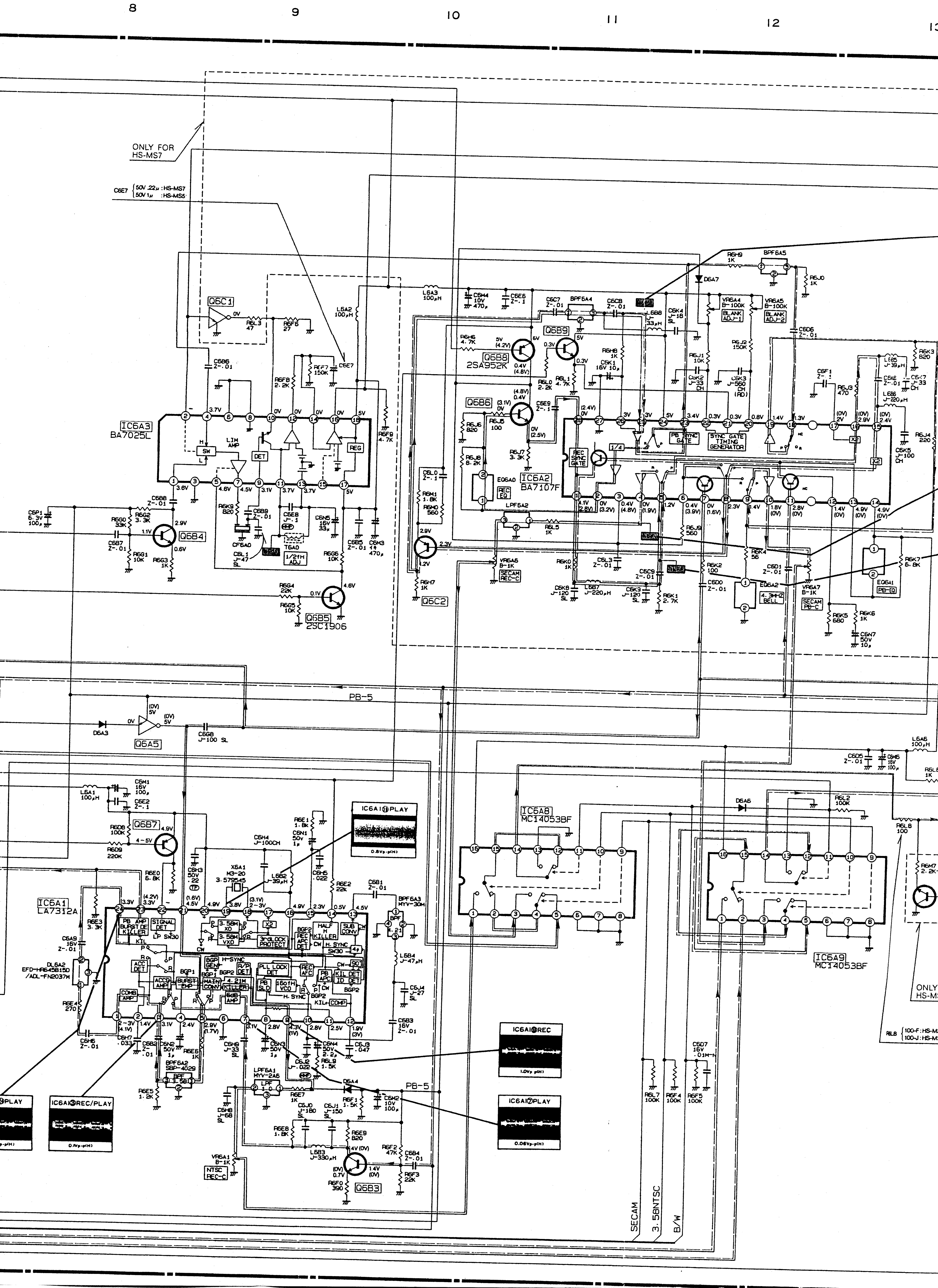
9
ONLY FOR HS-MS7
C6E7 {50V .22μ : HS-MS7 / 50V 1μ : HS-MS5
Q6A0
(0V) 5.1V
(2.5V) 0V
R6B0 8.2K
R6B1 1.2K
R6K8 10K
L6A7 J-3.3μH
L6A8 J-18μH
C5M7 50V 1μ
R6A3 8.2K
C6G2 J-82 SL
X6A0 4.433619 MHZ
C6G3 J-43 SL (RD)
C6G4 .047
C6G5 J-56 SL
Q6C1
R6L3 47
R6F6 27
L6A2 100μH
C6B6 Z-.01
R6F8 2.2K
R6F7 150K
C5E7
IC6A3
BA7025L
LIM AMP
SW
DET
REG
R6F9 4.7K
IC6A0⑤REC
0.8Vp-p(H)
IC6A0⑦PLAY
0.3Vp-p(H)
C6P1 6.3V 100μ
R6G0 33K
R6G2 3.3K
C6B8 Z-.01
Q6B4
C6B7 Z-.01
R6G1 10K
R6G3 1K
R6K9 820
C6B9 Z-.01
C6E8 J-.1
CF6A0
C6L1 J-47 SL
T6A0
1/2fH ADJ
C6N5 16V 33μ
R6G6 10K
C6B5 Z-.01
C6M3 470μ
BPF6A1 ELB-4K104N
C6H2 Z-.1
C6N0 50V 1μ
C6H1 J-.022
C6M9 50V 1μ
R6D2 22K
R6D4 1.2K
LPF6A0 ELB-4H049N
R6D3 1K
BGP
R6G4 22K
R6G5 10K
Q6B5
2SC1906
C6L2 Z-.022
R6C4 680
R6C5 1K
R6C9 3.9K
R6D6 10K
Q6B1
C6A5 Z-.01
R6D0 1.5K
Q6B2
R6D5 680
C6A7 J-68 SL
R6D7 22K
VIDEO-IN
PB-FM-C
PB-5
SP
D6A3
Q6A5
C6G8 J-100 SL
C6G7 .022
R6C8 390
R6A4 22K
C-SYNC
C6M1 16V 100μ
L6A1 100μH
C6E2 Z-.1
PAL-REC-C
ROT
R6D8 100K
R6D9 220K
Q6B7
C5P0 6.3V 100μ
L5C1 100μH
C6H4 J-100CH
X5A1 M3-20 3.579545
L6B2 J-39μH
R6E1 1.8K
C6N1 50V 1μ
C6H5 .022
R6E2 22K
C6B1 Z-.01
IC6A1⑩PLAY
0.8Vp-p(H)
R6E0 6.8K
C6H3 50V .22 (TF)
IC6A1
LA7312A
R6E3 3.3K
C6A9 16V Z-.01
DL6A2 EFD-H6458150 /ADL-FN2037M
R6E4 270
PB AMP BURST DE KILLER
SIGNAL DET
H LP SW30
3.58M XO
3.58M VXO
X2
3rd LOCK PROTECT
BGP2 REC APC DET
HALF H KILLER
SUB CONV
H. SYNC SW30
ACC DET
ACCD AMP
BGP1
BGP GENE
BURST EMP
MAIN CONV
R/P DET
PLL LOCK DET
4.21M KILLER
PB SLD
160fH VCO
REC AFC
PB APC
KIL DET ID DET
BGP2
COMB AMP
6dB AMP
KIL COMP
C6H6 Z-.01
C6H7 .033
C6B2 Z-.01
C6N2 50V 1μ
R6E6 1K
C6H8 J-33 SL
C6N3 50V 1μ
C6N4 50V 2.2μ
R6L9 1.5K
C6J3 .047
C6J2 J-.022
BPF6A2 SBP-4029
R6E5 1.2K
LPF6A1 MYV-2A6
R6E7 1K
D6A4
R6F1 1.5K
C5M2 10V 100μ
C6H8 J-68 SL
C6J0 J-180 SL
C6J1 J-150 SL
R6E8 1.8K
R6E9 820
L6B3 J-330μH
R6F2 47K
R6F0 390
Q6B3
VR6A1 B-1K
NTSC REC-C
IC6A1②PLAY
0.3Vp-p(H)
IC6A1③REC/PLAY
0.1Vp-p(H)
R6G7 4.7K
C6N5 6.3V 100μ
C6C5 Z-.01
L6A5 100μH
Q6A6
D6A5
IC6A4⑪PLAY
0.7Vp-p(H)
R6H5 22K
C6K0 J-560 CH (RD)
N-PAL VCO
SW CONT
XO IN
XO OUT
2fsc OUT
VCO TANK
REC APC FILT
SYNC IN BGP OUT
5.06M OUT
4.43M XO
4.43M VXO
SPH DET
REC APC
HALF H KILLER
SUB CONV
1/2
4fsc SIFT
ID COUNTER
F.F
BGP GEN
H. SYNC
1/320 or 321
90° P.S.
SIDE LOCK DET
REC AFC
PB AFC
KIL DET
ID DET
320/321 fH VCO
COMP
KILLER
SLD OUT
REC 627K OUT
VCO FILT
5.06M IN
KIL FILT
PB627K IN
GND


8
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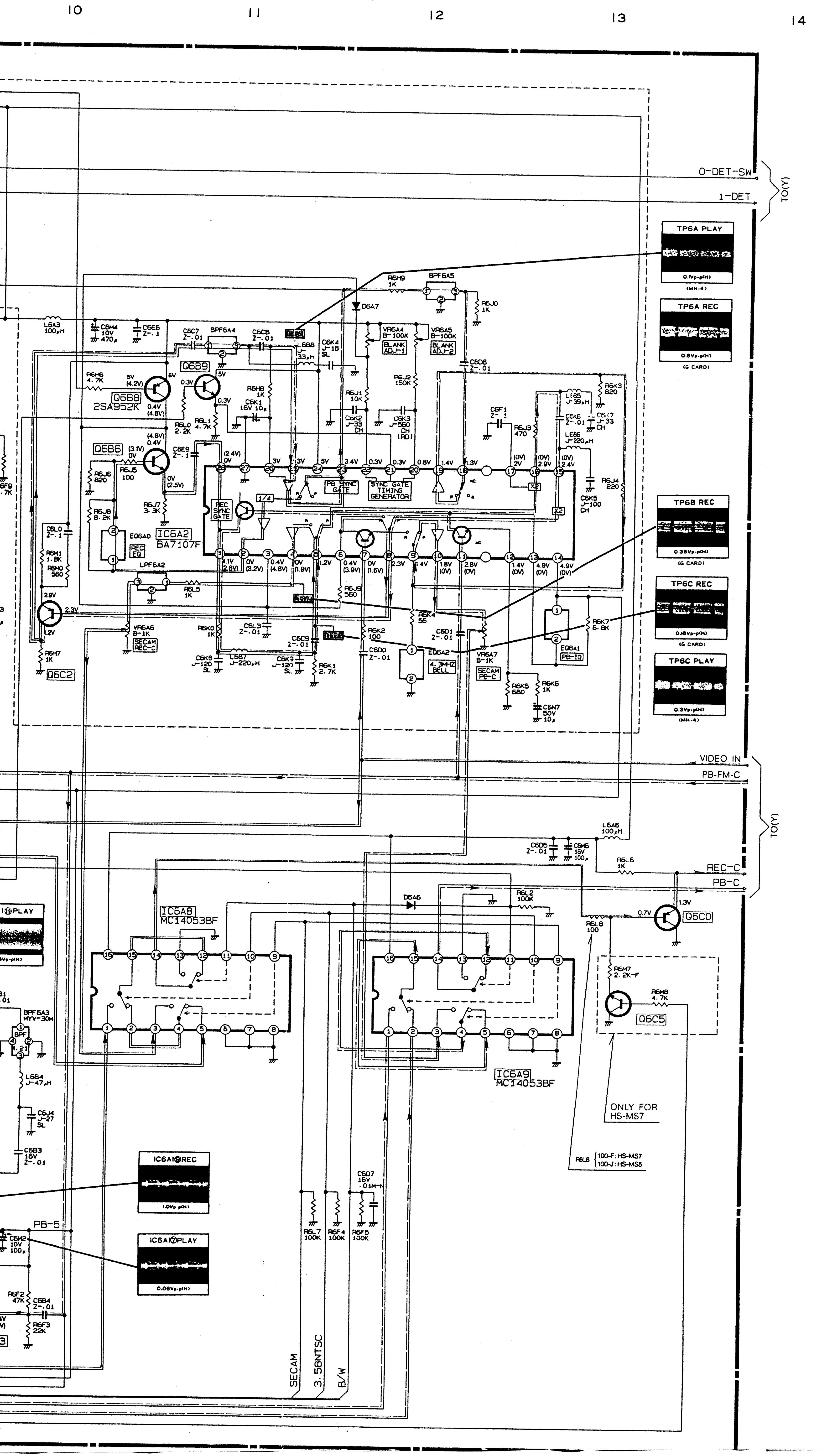
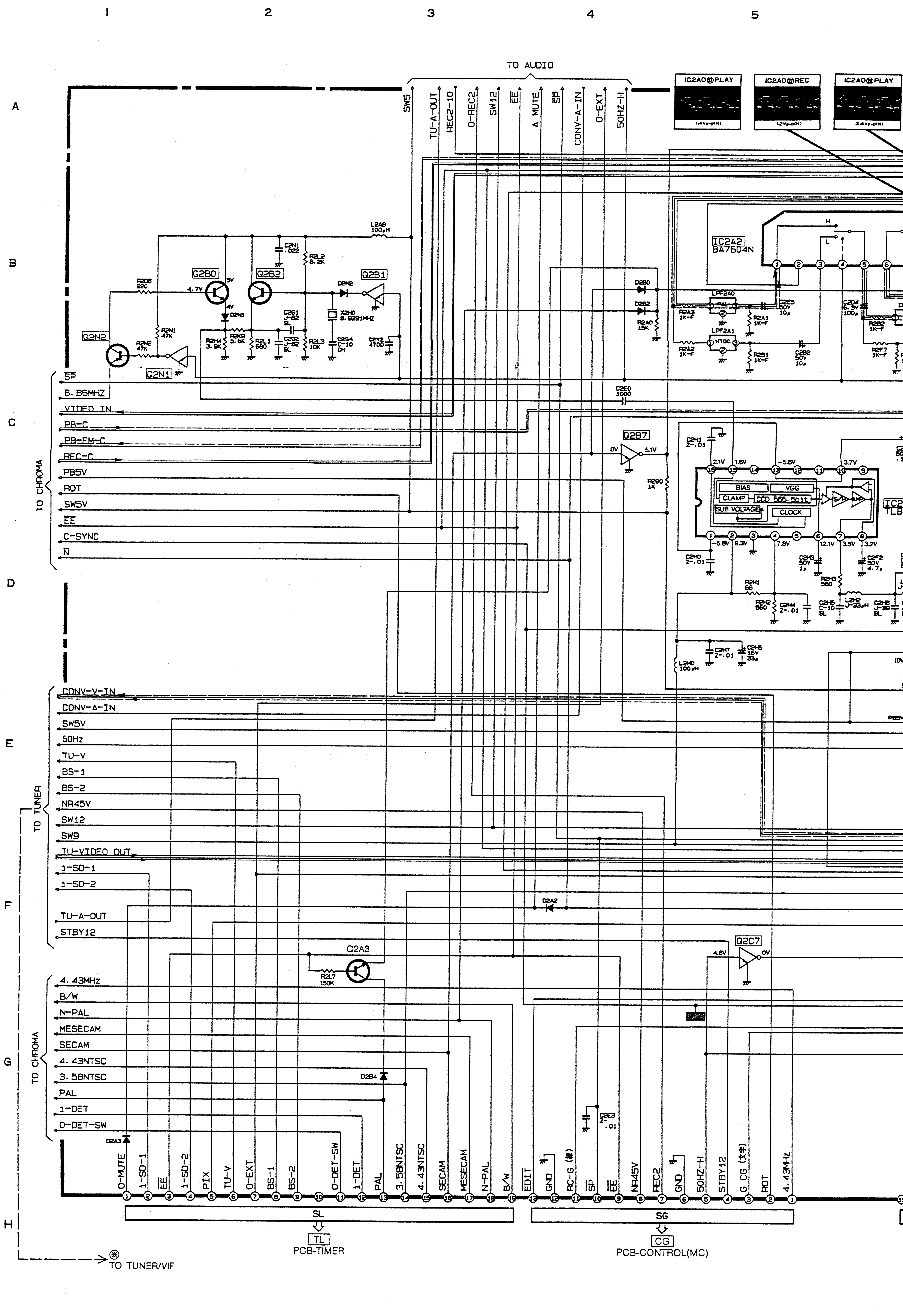
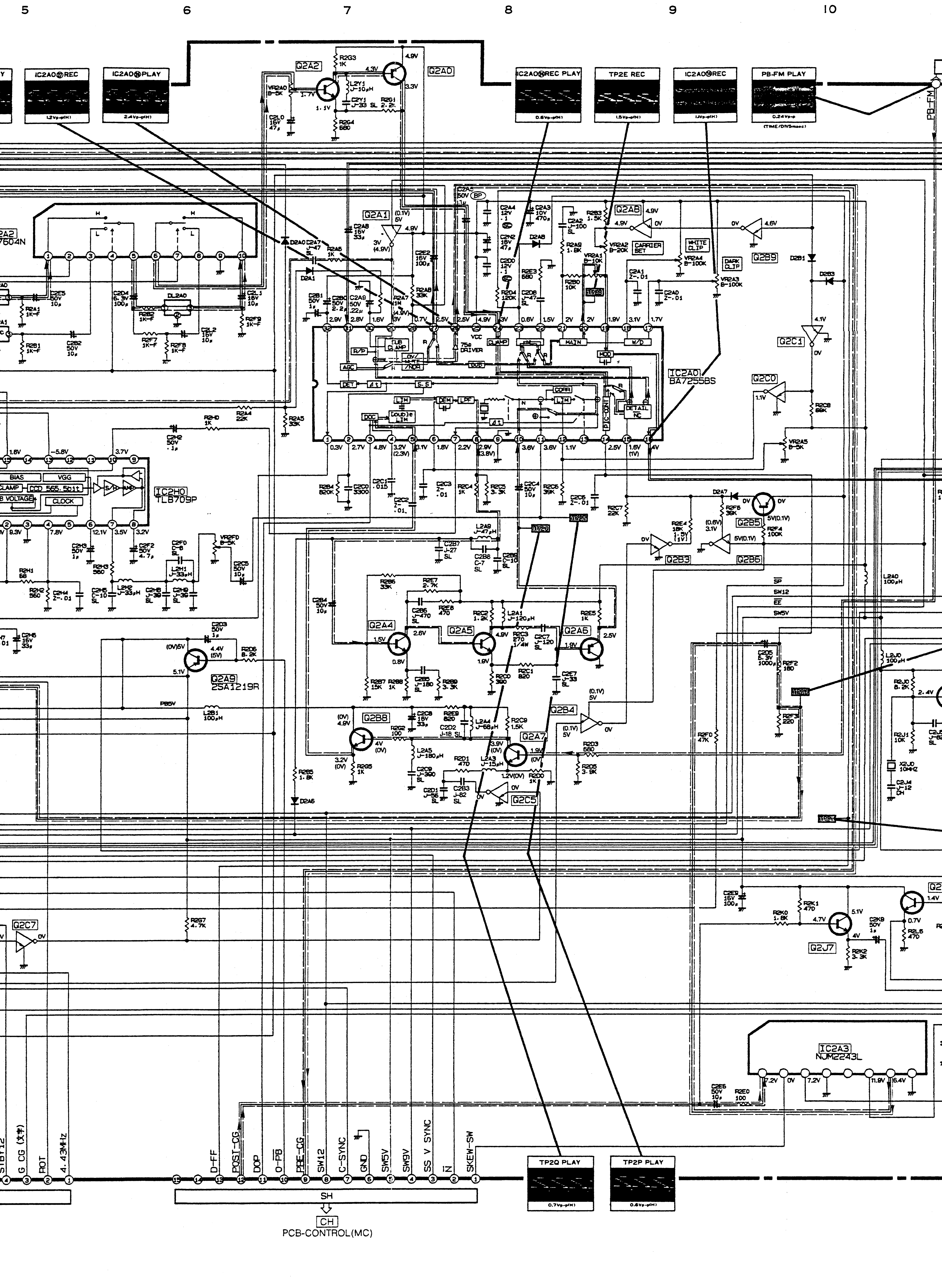
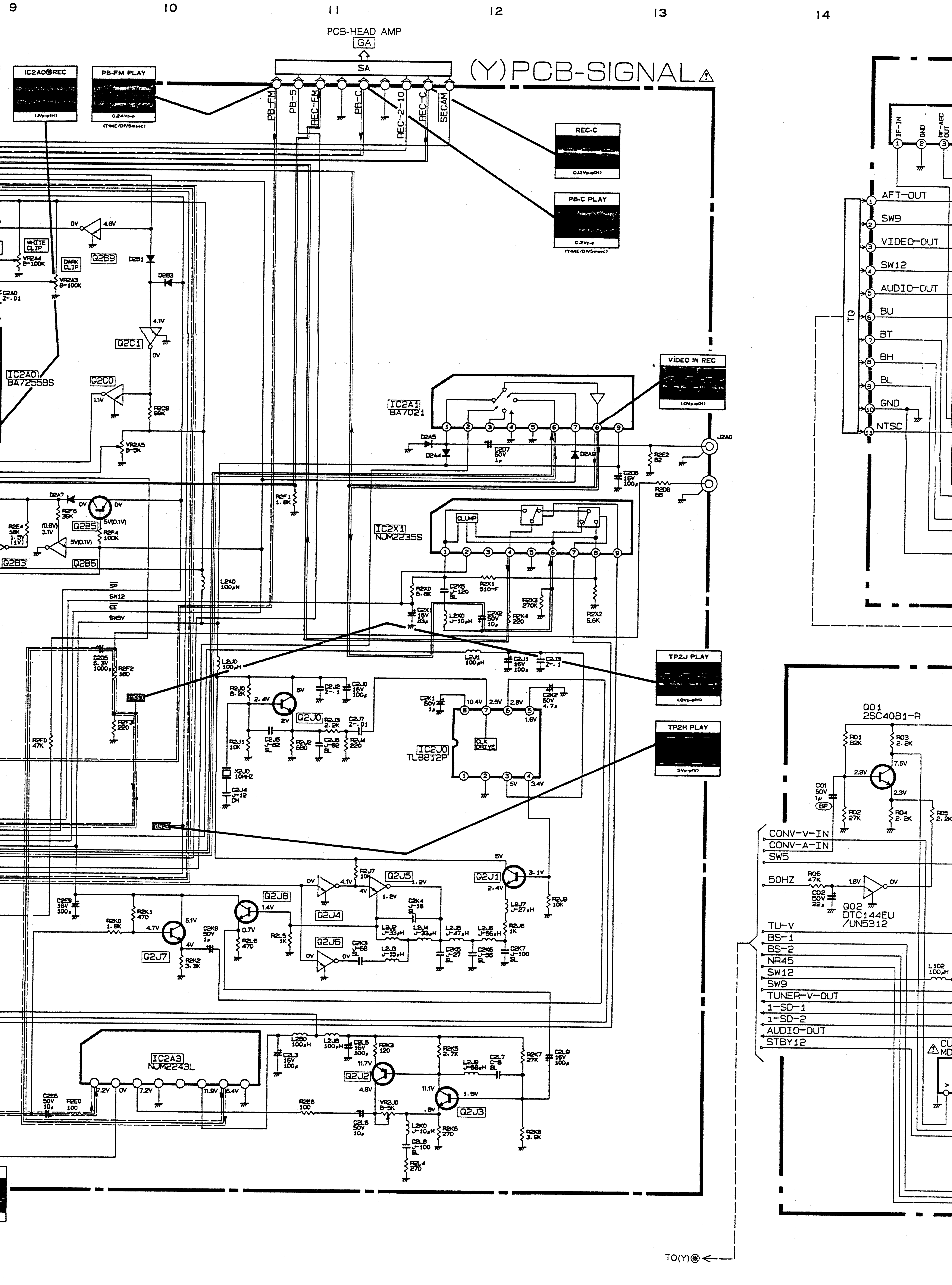
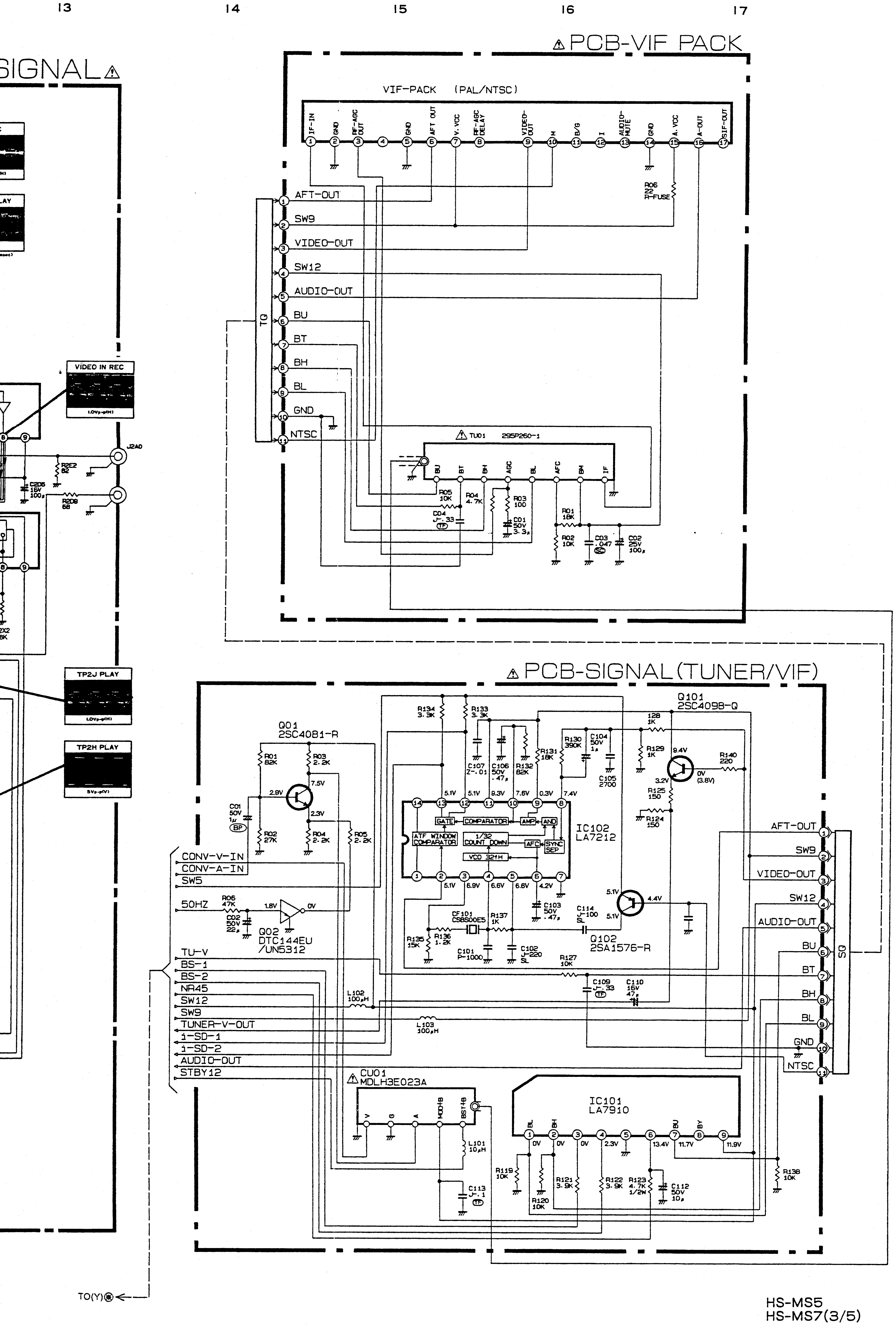
12
ONLY FOR HS-MS7
C6E7 50V .22μ : HS-MS7 / 50V 1μ : HS-MS5
Q6C1
IC6A3 BA7025L
LIM AMP
DET
REG
SW
CF6A0
T6A0
1/2fH ADJ
Q6B4
Q6B5 2SC1906
Q6B8 2SA952K
Q6B9
Q6B6
Q6C2
IC6A2 BA7107F
E06A0 REC EQ
REC SYNC GATE
PB SYNC GATE
SYNC GATE TIMING GENERATOR
BPF6A4
BPF6A5
VR6A4 B-100K BLANK ADJ-1
VR6A5 B-100K BLANK ADJ-2
LPF6A2
VR6A6 B-1K SECAM REC-C
EQ6A2 4.3MHz BELL
VR6A7 B-1K SECAM PB-C
E06A1 PB-EQ
D6A7
PB-5
D6A3
Q6A5
C6G8 J-100 SL
Q6B7
IC6A1 LA7312A
PB AMP BURST DE KILLER
SIGNAL DET
LP SW30
ACC DET
ACC AMP
COMB AMP
BURST EMP
MAIN CONV
4.21M KIL LPF
6dB AMP
PLL LOCK DET
1601fH VCO
REC AFC
PB APC
KIL DET ID DET
HALF H KILLER
SUB CONV
3.58M XO
3.58M VXO
X2
3rd LOCK PROTECT
BGP GENE
BGP1
BGP2
R/P DET
REC APC DET
H-SYNC
H. SYNC
KIL COMP
X6A1 M3-20 3.579545
BPF6A3 MYV-30M
DL6A2 EFD-HR6458150 /ADL-FN2037M
BPF6A2 SBP-4029
LPF6A1 MYV-2A6
D6A4
Q6B3
VR6A1 B-1K NTSC REC-C
IC6A1⑲PLAY 0.8Vp-p(H)
IC6A1⑥REC 1.0Vp-p(H)
IC6A1⑦PLAY 0.06Vp-p(H)
IC6A1⑤REC/PLAY 0.1Vp-p(H)
⑧PLAY
IC6A8 MC14053BF
IC6A9 MC14053BF
D6A6
SECAM
3.58NTSC
B/W
ONLY HS-M
R6L8 100-F : HS-M / 100-J : HS-M

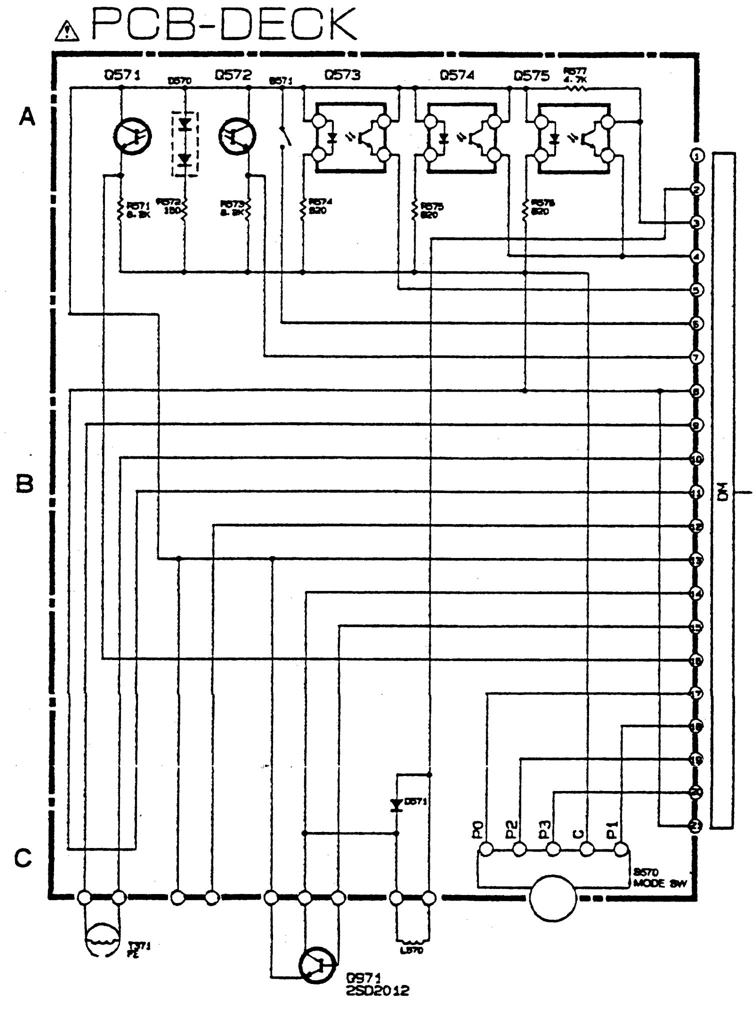

10
11
12
13
14
O-DET-SW
i-DET
TO(Y)
TP6A PLAY
0.1Vp-p(H)
(MH-4)
TP6A REC
0.8Vp-p(H)
(G CARD)
TP6B REC
0.35Vp-p(H)
(G CARD)
TP6C REC
0.18Vp-p(H)
(G CARD)
TP6C PLAY
0.3Vp-p(H)
(MH-4)
R6H9 1K
BPF6A5
D6A7
R6J0 1K
VR6A4 B-100K
BLANK ADJ-1
VR6A5 B-100K
BLANK ADJ-2
L6A3 100μH
C6M4 10V 470μ
C6E6 Z-.1
C6C7 Z-.01
BPF6A4
C6C8 Z-.01
L6B8 J-33μH SL
C6K4 J-18 SL
C6D6 Z-.01
R6J2 150K
R6H6 4.7K
Q6B8
2SA952K
Q6B9
R6H8 1K
C6K1 16V 10μ
R6J1 10K
C6K2 J-33 CH
C6K3 J-560 CH (RD)
C6F1 Z-.1
R6J3 470
L6B5 J-39μH
C6K6 Z-.01
C6K7 J-33 CH
R6K3 820
L6B6 J-220μH
R6L0 2.2K
R6L1 4.7K
Q6B6
C6E9 Z-.1
R6J6 820
R6J5 100
R6J7 3.3K
R6J8 8.2K
C6K5 J-100 CH
R6J4 220
PB SYNC GATE
SYNC GATE TIMING GENERATOR
REC SYNC GATE
1/4
X2
E06A0
REC EQ
IC6A2
BA7107F
C6L0 Z-.1
R6M1 1.8K
R6M0 560
LPF6A2
R6L5 1K
Q6C2
R6H7 1K
VR6A6 B-1K
SECAM REC-C
R6K0 1K
C6L3 Z-.01
C6C9 Z-.01
C6K8 J-120 SL
L6B7 J-220μH
C6K9 J-120 SL
R6K1 2.7K
R6J9 560
R6K2 100
C6D0 Z-.01
R6K4 56
C6D1 Z-.01
E06A2
4.3MHZ BELL
VR6A7 B-1K
SECAM PB-C
R6K5 680
R6K6 1K
C6N7 50V 10μ
R6K7 6.8K
E06A1
PB-EQ
VIDEO IN
PB-FM-C
TO(Y)
L6A6 100μH
C6D5 Z-.01
C6M5 16V 100μ
R6L6 1K
REC-C
PB-C
D6A6
R6L2 100K
R6L8 100
Q6C0
IC6A8
MC14053BF
IC6A9
MC14053BF
R6M7 2.2K-F
R6M8 4.7K
Q6C5
ONLY FOR HS-MS7
R6L8 {100-F:HS-MS7 100-J:HS-MS5
IC6A1ⓐPLAY
BPF6A3 MYV-30M
BPF
4.21
L6B4 J-47μH
C6J4 J-27 SL
C6B3 16V Z-.01
IC6A1ⓐREC
1.0Vp-p(H)
IC6A1ⓐPLAY
0.06Vp-p(H)
PB-5
C6M2 10V 100μ
R6F2 47K
C6B4 Z-.01
R6F3 22K
C6D7 16V .01M-N
R6L7 100K
R6F4 100K
R6F5 100K
SECAM
3.58NTSC
B/W
5V (4.2V)
6V
0.3V
5V
0.4V (4.8V)
(4.8V) 0.4V
(3.1V) 0V
0V (2.5V)
(2.4V) 0V
3V
3.4V
0.3V
0.8V
1.4V
1.3V
(0V) 2V
(0V) 2.9V
(0V) 2.4V
4.1V (2.8V)
0V (3.2V)
0.4V (4.8V)
0V (1.9V)
1.2V
0.4V (3.9V)
0V (1.6V)
2.3V
1.4V
1.8V (0V)
2.8V (0V)
1.4V (0V)
4.9V (0V)
4.9V (0V)
2.9V
2.3V
1.2V
0.7V
1.3V

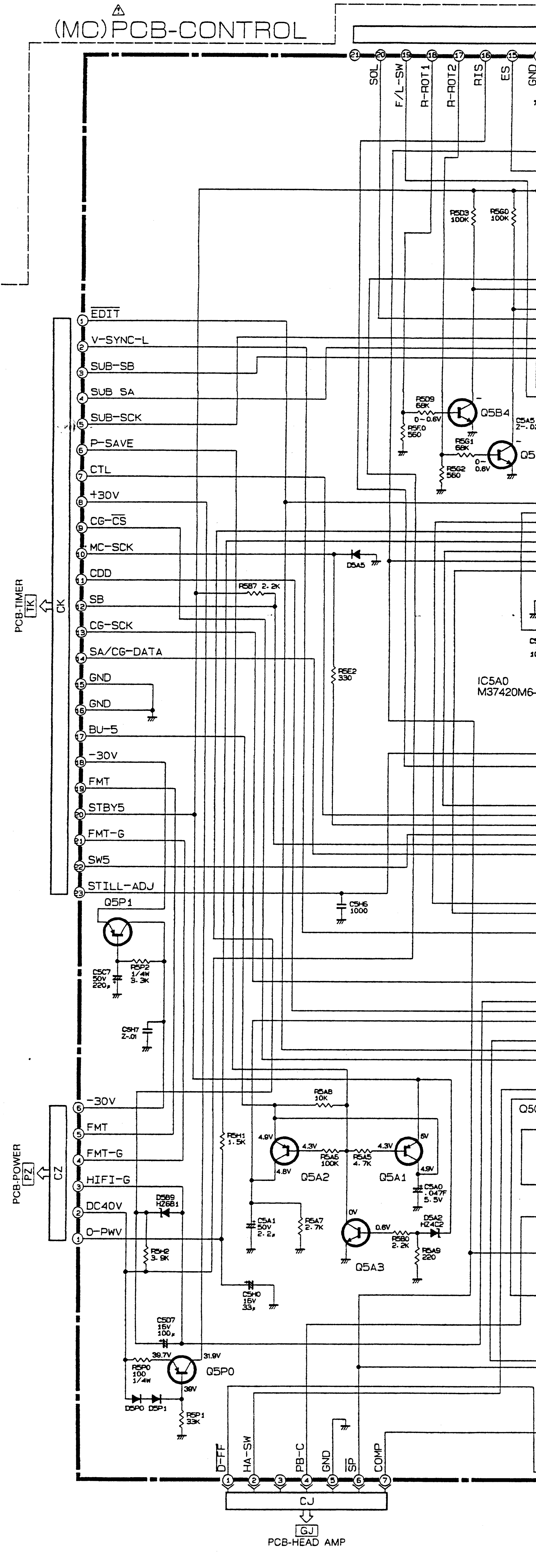

1
2
3
4
5
A
B
C
D
E
F
G
H
TO AUDIO
SW5
TU-A-OUT
REC2-10
O-REC2
SW12
EE
A MUTE
SP
CONV-A-IN
O-EXT
50HZ-H
IC2A0⑦PLAY
IC2A0⑦REC
IC2A0⑩PLAY
1.4Vp-p(H)
1.2Vp-p(H)
2.4Vp-p(H)
IC2A2
BA7604N
LPF2A0
PAL
LPF2A1
NTSC
L2A8 100μH
C2N1 .022
R2L2 8.2K
Q2B0
Q2B2
Q2B1
R208 220
4.7V
5V
4V
D2N1
D2N2
X2H0 8.8291MHZ
C2G1
R2N1 47K
R2N2 47K
Q2N2
Q2N1
R2H4 3.9K
R2K9 5.6K
R2L1 680
R2L3 10K
C2Y2 4700
D2B0
D2B2
R2A0 15K
R2A3 1K-F
R2A1 1K-F
R2A2 1K-F
R2B1 1K-F
C2E5 50V 10μ
C2B2 50V 10μ
C2D4 6.3V 100μ
R2B2 1K-F
R2F7 1K-F
C2E0 1000
SP
8.86MHZ
VIDEO IN
PB-C
PB-FM-C
REC-C
PB5V
ROT
SW5V
EE
C-SYNC
N
TO CHROMA
Q2B7
0V
5.1V
R2B0 1K
C2H1 Z-.01
2.1V
1.6V
-5.8V
3.7V
BIAS
VGG
CLAMP
CCD 565.5bit
S/H
AMP
SUB VOLTAGE
CLOCK
-5.8V
8.3V
7.8V
12.1V
3.5V
3.2V
C2H0 Z-.01
C2H3 50V 1μ
C2F2 50V 4.7μ
R2H3 560
R2H1 68
R2H2 560
C2H4 Z-.01
C2H5
L2H2 33μH
C2H6
C2H7 Z-.01
C2H8 16V 33μ
L2H0 100μH
CONV-V-IN
CONV-A-IN
SW5V
50Hz
TU-V
BS-1
BS-2
NR45V
SW12
SW9
TU-VIDEO OUT
i-SD-1
i-SD-2
TU-A-OUT
STBY12
TO TUNER
D2A2
Q2A3
R2L7 150K
Q2C7
4.6V
0V
4.43MHz
B/W
N-PAL
MESECAM
SECAM
4.43NTSC
3.58NTSC
PAL
i-DET
O-DET-SW
TO CHROMA
D2B4
D2A3
C2E3 Z-.01
O-MUTE
1-SD-1
EE
1-SD-2
PIX
TU-V
O-EXT
BS-1
BS-2
O-DET-SW
1-DET
PAL
3.58NTSC
4.43NTSC
SECAM
MESECAM
N-PAL
B/W
EDIT
GND
RC-G (※)
SP
EE
NR45V
REC2
GND
50HZ-H
STBY12
G CG (文字)
ROT
4.43MHz
SL
TL
PCB-TIMER
SG
CG
PCB-CONTROL(MC)
※ TO TUNER/VIF

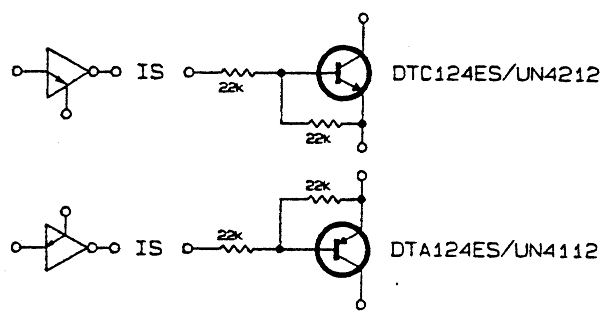

5
6
7
8
9
10
IC2A0⑦REC
IC2A0⑮PLAY
IC2A0⑱REC PLAY
TP2E REC
IC2A0⑲REC
PB-FM PLAY
PB-FM
Q2A2
Q2A0
Q2A1
Q2A8
Q2B9
Q2C1
Q2C0
IC2A0
BA7255BS
IC2H0
TLB709P
Q2A4
Q2A5
Q2A6
Q2A9
2SA1219R
Q2B8
Q2A7
Q2B4
Q2C5
Q2B5
Q2B3
Q2B6
Q2C7
Q2J7
IC2A3
NJM2243L
DL2A0
VR2A0 B-5K
VR2A2 B-20K
VR2A4 B-100K
VR2A3 B-100K
VR2A5 B-5K
VR2F0 B-5K
CARRIER SET
WHITE CLIP
DARK CLIP
SUB CLAMP
AGC
DET
R/P
75Ω DRIVER
VCC
CLAMP
MAIN
W/D
MOD
COMP
LIM
DEM
LPF
DOC
Double LIM
DETAIL
NC
P.I.C. CONT
BIAS
VGG
CLAMP
CCD 565.5bit
S/H
AMP
CLOCK
PB5V
SP
SW12
EE
SW5V
X2J0 10MHz
STBY12
G CG (文字)
ROT
4.43MHz
D-FF
POST-CG
DOP
O-PB
PRE-CG
SW12
C-SYNC
GND
SW5V
SW9V
SS V SYNC
IN
SKEW-SW
TP2Q PLAY
TP2P PLAY
SH
CH
PCB-CONTROL(MC)


9
10
11
12
13
14
PCB-HEAD AMP
GA
SA
(Y) PCB-SIGNAL
IC2A0 REC
PB-FM PLAY
0.24Vp-p
(TIME/DIV5msec)
PB-FM
PB-5
REC-FM
PB-C
REC-2-10
REC-C
SECAM
REC-C
PB-C PLAY
0.2Vp-p
(TIME/DIV5msec)
WHITE CLIP
DARK CLIP
VR2A4 B-100K
VR2A3 B-100K
Q2B9
D2B1
D2B3
Q2C1
Q2C0
IC2A0
BA7255BS
R2C8 68K
VR2A5 B-5K
VIDEO IN REC
1.0Vp-p(H)
IC2A1
BA7021
D2A5
D2A4
C2D7 50V 1μ
D2A9
R2E2 82
J2A0
C2D5 16V 100μ
R2D8 68
R2F1 1.8K
D2A7
R2F5 36K
Q2B5
R2F4 100K
R2E4 18K
Q2B3
Q2B6
IC2X1
NJM2235S
CLUMP
L2A0 100μH
SP
SW12
EE
SW5V
R2X0 6.8K
C2X5 J-120 SL
R2X1 510-F
R2X3 270K
R2X2 5.6K
C2X1 16V 33μ
L2X0 J-10μH
C2X2 50V 10μ
R2X4 220
C2D5 6.3V 1000μ
R2F2 180
R2F3 220
R2F0 47K
L2J0 100μH
L2J1 100μH
C2J1 16V 100μ
C2J3 Z-.1
TP2J PLAY
1.0Vp-p(H)
R2J0 8.2K
Q2J0
C2J2 Z-.1
C2J0 16V 100μ
R2J3 2.2K
C2J7 Z-.01
R2J1 10K
C2J5 J-82 SL
R2J2 680
C2J6 J-82
R2J4 220
X2J0 10MHz
C2J4 J-12 CH
C2K1 50V 1μ
C2K2 50V 4.7μ
CLK DRIVE
IC2J0
TL8812P
TP2H PLAY
5Vp-p(V)
Q2J5
Q2J1
R2J7 10K
R2J9 10K
L2J7 J-27μH
R2J8 1K
Q2J8
Q2J4
Q2J6
C2K4 J-18
L2J2 J-33μH
L2J4 J-33μH
L2J5 J-47μH
L2J6 J-56μH
C2K3 J-68
L2J3 J-15μH
C2K5 J-27 SL
C2K6 J-56 SL
C2K7 J-100 SL
C2E9 16V 100μ
R2K0 1.8K
R2K1 470
Q2J7
C2K9 50V 1μ
R2L6 470
R2L5 1K
R2K2 3.3K
IC2A3
NJM2243L
C2E6 50V 10μ
R2E0 100
R2E5 100
L2B0 100μH
L2J8 100μH
C2L5 16V 100μ
R2K3 120
C2L3 16V 100μ
R2K5 2.7K
L2J9 J-68μH
C2L7 C-8 SL
R2K7 27K
C2L9 16V 100μ
Q2J2
Q2J3
VR2J0 B-5K
C2L6 50V 10μ
L2K0 J-10μH
R2K6 270
C2L8 J-100 SL
R2L4 270
R2K8 3.9K
TQ
IF-IN
GND
RF-AGC OUT
AFT-OUT
SW9
VIDEO-OUT
SW12
AUDIO-OUT
BU
BT
BH
BL
GND
NTSC
Q01
2SC4081-R
R01 82K
R03 2.2K
C01 50V 1μ BP
R02 27K
R04 2.2K
R05 2.2K
CONV-V-IN
CONV-A-IN
SW5
50HZ
R06 47K
C02 50V 22μ
Q02
DTC144EU
/UN5312
TU-V
BS-1
BS-2
NR45
SW12
SW9
TUNER-V-OUT
i-SD-1
i-SD-2
AUDIO-OUT
STBY12
L102 100μH
TO(Y)


13
14
15
16
17
SIGNAL
PCB-VIF PACK
VIF-PACK (PAL/NTSC)
IF-IN
GND
RF-AGC OUT
GND
AFT OUT
V. VCC
RF-AGC DELAY
VIDEO-OUT
M
B/G
I
AUDIO-MUTE
GND
A. VCC
A-OUT
SIF-OUT
R06 22 R-FUSE
TQ
AFT-OUT
SW9
VIDEO-OUT
SW12
AUDIO-OUT
BU
BT
BH
BL
GND
NTSC
TU01 295P260-1
BU
BT
BH
AGC
BL
AFC
BM
IF
R05 10K
R04 4.7K
R03 100
C04 J-.33
C01 50V 3.3μ
R01 18K
R02 10K
C03 .047
C02 25V 100μ
VIDEO IN REC
1.0Vp-p(H)
J2A0
R2E2 82
C206 16V 100μ
R208 68
TP2J PLAY
1.0Vp-p(H)
TP2H PLAY
5Vp-p(V)
PCB-SIGNAL(TUNER/VIF)
Q01 2SC4081-R
R01 82K
R03 2.2K
7.5V
2.9V
2.3V
C01 50V 1μ BP
R02 27K
R04 2.2K
R05 2.2K
CONV-V-IN
CONV-A-IN
SW5
50HZ
R06 47K
1.8V
0V
C02 50V 22μ
Q02 DTC144EU /UN5312
TU-V
BS-1
BS-2
NR45
SW12
SW9
TUNER-V-OUT
i-SD-1
i-SD-2
AUDIO-OUT
STBY12
R134 3.3K
R133 3.3K
C107 Z-.01
C106 50V .47μ
R132 82K
R131 18K
R130 390K
C104 50V 1μ
C105 2700
5.1V
5.1V
9.3V
7.6V
0.3V
7.4V
GATE
COMPARATOR
AMP
AND
ATF WINDOW COMPARATOR
1/32 COUNT DOWN
AFC
SYNC SEP
VCO 321H
IC102 LA7212
5.1V
6.9V
6.6V
6.6V
4.2V
CF101 CSB500E5
R137 1K
R135 15K
R136 1.2K
C101 P-1000
C102 J-220 SL
C103 50V .47μ
C114 J-100 SL
R127 10K
Q101 2SC4098-Q
128 1K
R129 1K
9.4V
3.2V
0V (3.8V)
R140 220
R125 150
R124 150
5.1V
4.4V
5.1V
Q102 2SA1576-R
L102 100μH
L103 100μH
C109 J-.33
C110 16V 47μ
SQ
AFT-OUT
SW9
VIDEO-OUT
SW12
AUDIO-OUT
BU
BT
BH
BL
GND
NTSC
CU01 MDLH3E023A
V
G
A
MOD+B
BST+B
L101 10μH
C113 J-.1
IC101 LA7910
BL
BH
BU
BY
0V
0V
0V
2.3V
13.4V
11.7V
11.9V
R119 10K
R120 10K
R121 3.9K
R122 3.9K
R123 4.7K 1/2W
C112 50V 10μ
R138 10K
TO(Y)


⚠PCB-DECK
Q571
D570
Q572
S571
Q573
Q574
Q575
R577 4.7K
R571 6.8K
R572 180
R573 6.8K
R574 820
R575 820
R576 820
D571
P0
P2
P3
G
P1
S570 MODE SW
Q971 2SD2012
L970
DN

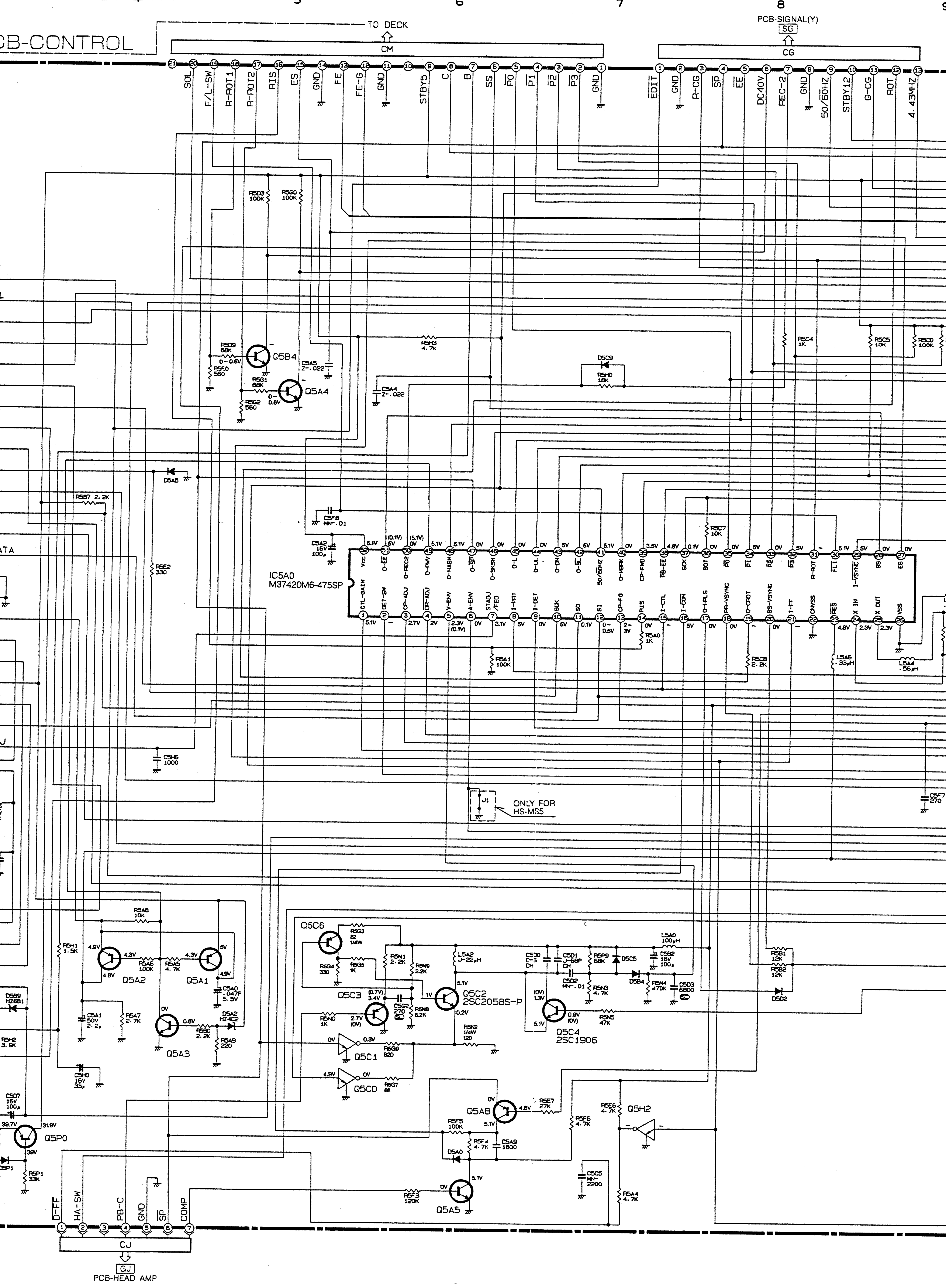

⚠(MC)PCB-CONTROL
SOL
F/L-SW
R-ROT1
R-ROT2
RIS
ES
GND
EDIT
V-SYNC-L
SUB-SB
SUB SA
SUB-SCK
P-SAVE
CTL
+30V
CG-CS
MC-SCK
CDD
SB
CG-SCK
SA/CG-DATA
GND
GND
BU-5
-30V
FMT
STBY5
FMT-G
SW5
STILL-ADJ
PCB-TIMER
TK
CK
R5D3 100K
R5G0 100K
R5D9 68K
Q5B4
R5F0 560
R5G1 68K
R5G2 560
C5A5 Z-.0
D5A5
R587 2.2K
R5E2 330
IC5A0
M37420M6-
C5H6 1000
Q5P1
C5C7 50V 220μ
R5P2 1/4W 3.3K
C5H7 Z-.01
-30V
FMT
FMT-G
HIFI-G
DC40V
O-PWV
PCB-POWER
PZ
CZ
D5B9 HZ6B1
R5H2 3.9K
R5H1 1.5K
R5A8 10K
Q5A2
Q5A1
R5A6 100K
R5A5 4.7K
C5A0 .047F 5.5V
C5A1 50V 2.2μ
R5A7 2.7K
Q5A3
R5B0 2.2K
D5A2 HZ4C2
R5A9 220
C5H0 16V 33μ
C507 16V 100μ
R5P0 100 1/4W
Q5P0
D5P0
D5P1
R5P1 33K
D-FF
HA-SW
PB-C
GND
SP
COMP
CJ
GJ
PCB-HEAD AMP

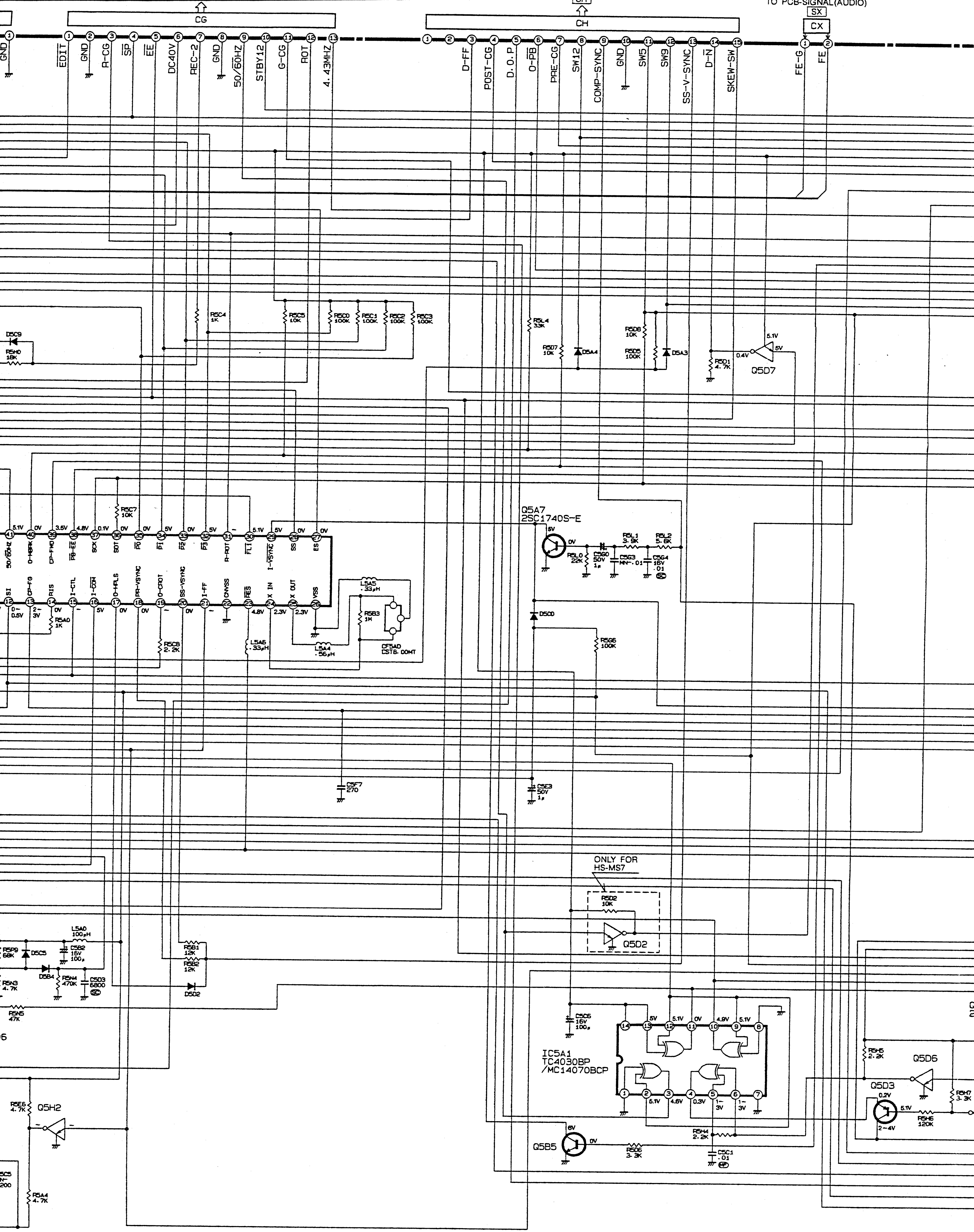

IS
22K
22K
DTC124ES/UN4212
IS
22K
22K
DTA124ES/UN4112

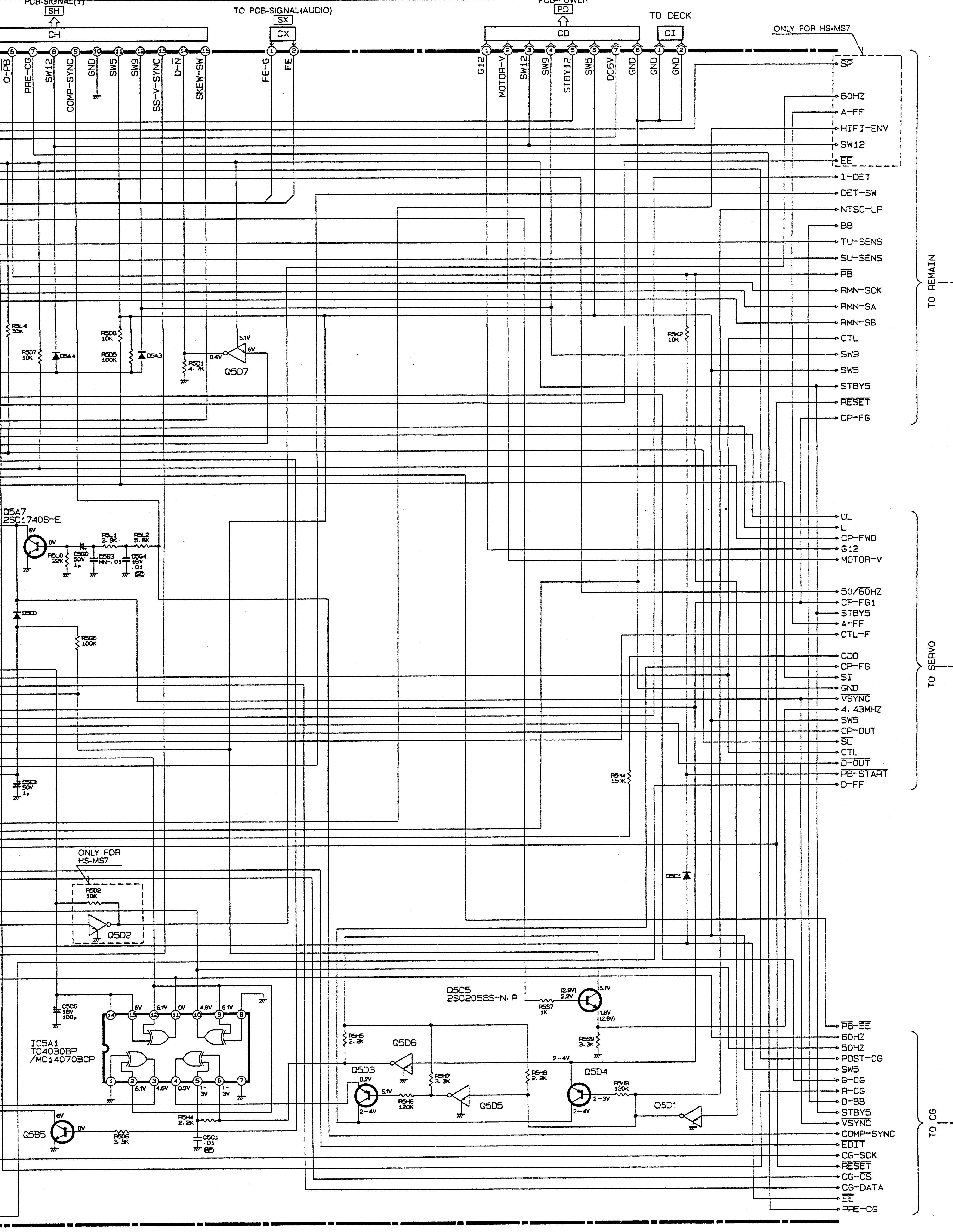
All diodes are 1SS252 unless otherwise specified.

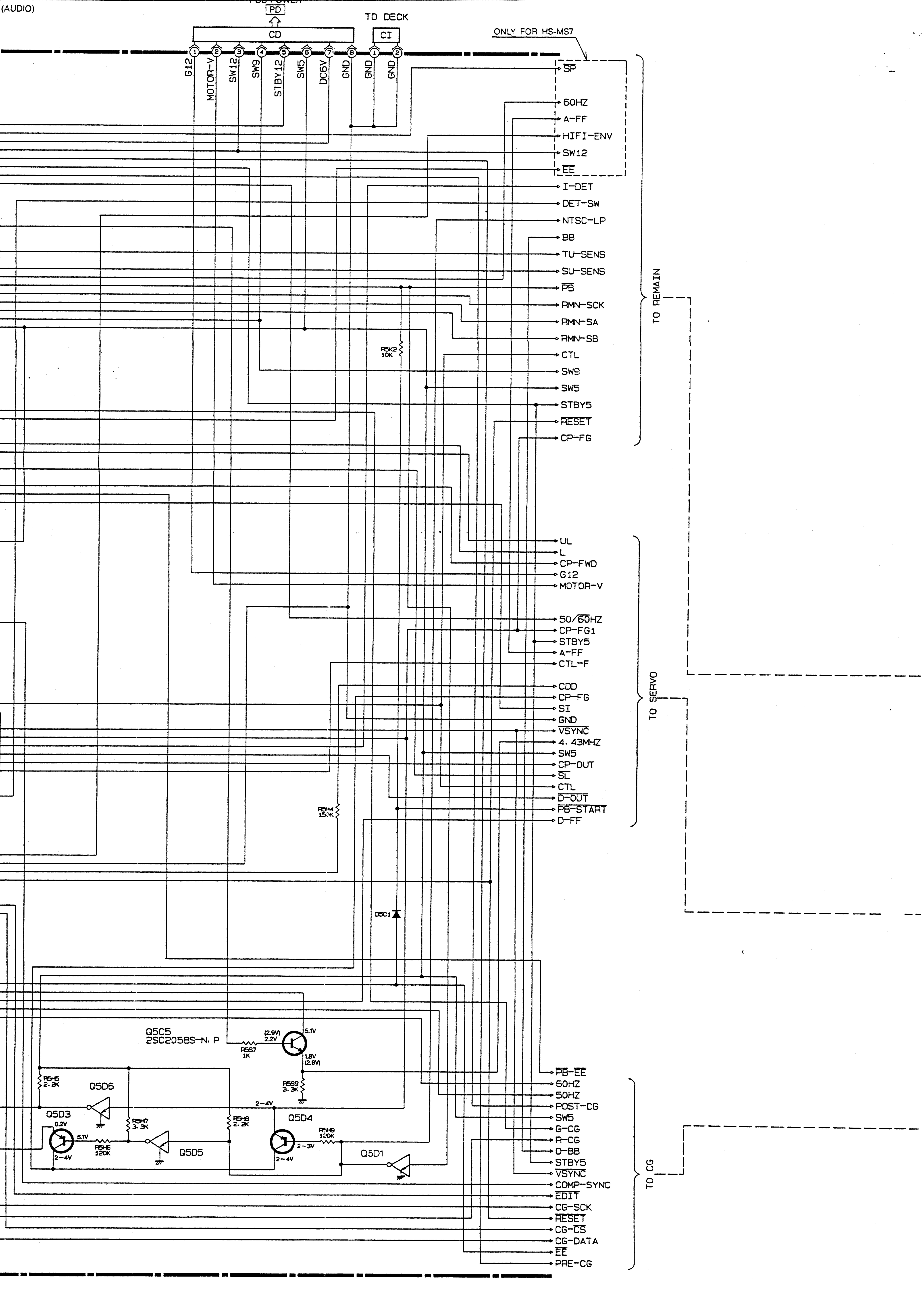
All NPN transistors are 2SC3311A-R.S/2SC1740S-R.S unless otherwise specified.

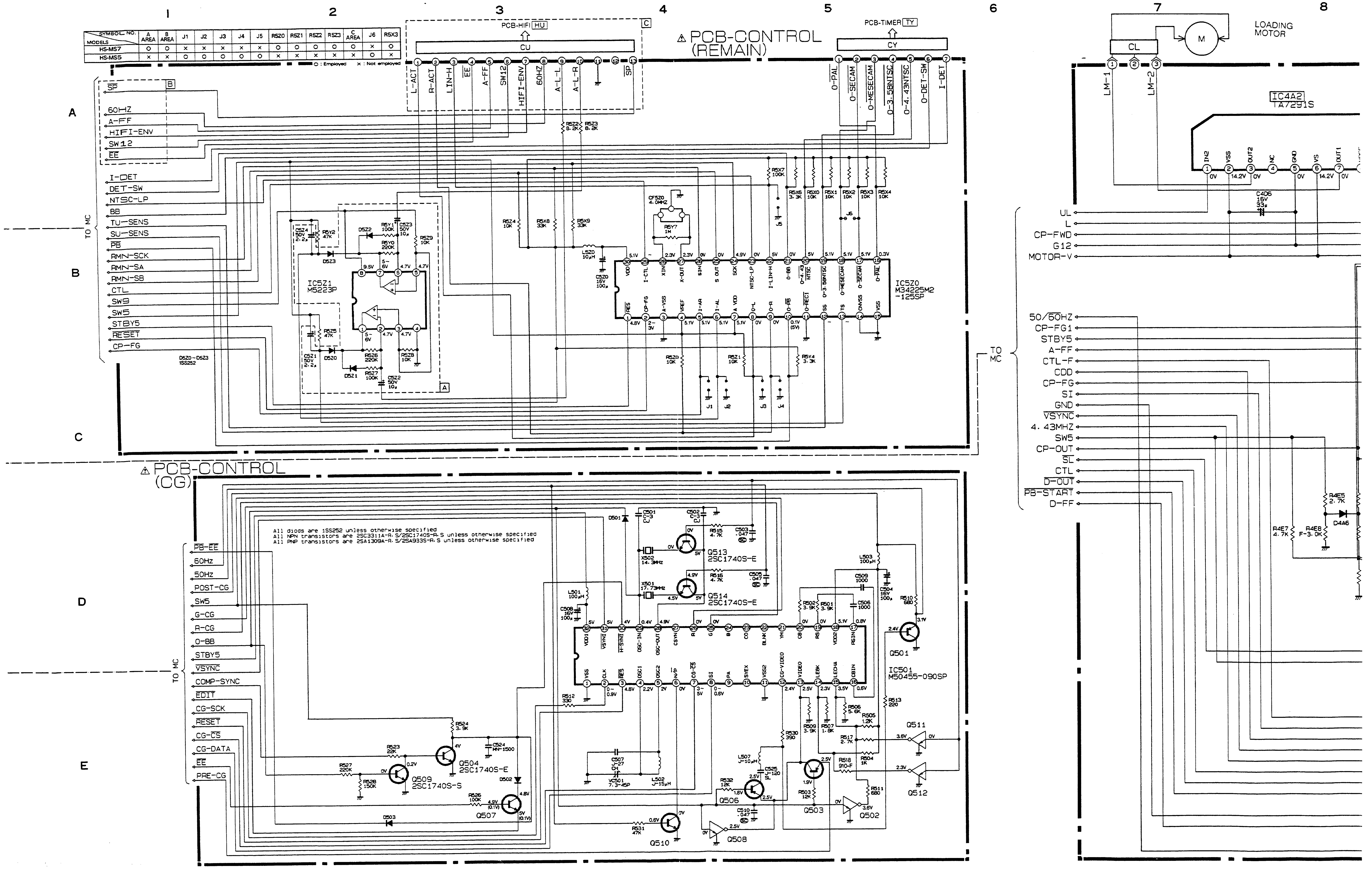
All PNP transistors are 2SA1309A-R.S/2SA933S-R.S unless otherwise specified.


5
6
7
8
CB-CONTROL
TO DECK
CM
PCB-SIGNAL(Y)
SG
CG
SOL
F/L-SW
R-ROT1
R-ROT2
RIS
ES
GND
FE
FE-G
GND
STBY5
C
B
SS
P0
P1
P2
P3
GND
EDIT
GND
R-CG
SP
EE
DC40V
REC-2
GND
50/60HZ
STBY12
G-CG
ROT
4.43MHZ
R5D3 100K
R5G0 100K
R5D9 68K
Q5B4
R5F0 560
0-0.6V
R5G1 68K
R5G2 560
0-0.6V
Q5A4
C5A5 Z-.022
R5H3 4.7K
C5A4 Z-.022
D5C9
R5H0 18K
R5C4 1K
R5C5 10K
R5C0 100K
D5A5
R5B7 2.2K
C5F8 MN-.01
C5A2 16V 100μ
R5C7 10K
IC5A0
M37420M6-475SP
R5E2 330
R5A0 1K
R5A1 100K
R5C8 2.2K
L5A5 .33μH
L5A4 .56μH
C5H6 1000
J1
ONLY FOR HS-MS5
C5F7 270
R5A8 10K
R5H1 1.5K
Q5A2
Q5A1
R5A6 100K
R5A5 4.7K
C5A0 .047F 5.5V
D5B9 HZ6B1
C5A1 50V 2.2μ
R5A7 2.7K
Q5A3
R5B0 2.2K
D5A2 HZ4C2
R5A9 220
R5H2 3.9K
C5H0 16V 33μ
C5D7 16V 100μ
Q5P0
R5P1 33K
D5P1
39.7V
31.9V
38V
Q5C6
R5G3 82 1/4W
R5G4 330
R5G5 1K
R5N1 2.2K
R5N9 2.2K
L5A2 J-22μH
Q5C3
Q5C2 2SC2058S-P
C5G2 270
R5N8 8.2K
R5N0 1K
R5N2 1/4W 120
Q5C1
R5G9 820
Q5C0
R5G7 68
C5D0 CH 7.5
C5D1 J-68P CH
C5D2 MN-.01
R5P9 68K
D5C5
R5N3 4.7K
L5A0 100μH
C5B2 16V 100μ
D5B4
R5N4 470K
C5D3 6800
Q5C4 2SC1906
R5N5 47K
R5B1 12K
R5B2 12K
D5D2
Q5A8
R5E7 27K
R5F5 100K
R5F4 4.7K
C5A9 1800
D5A0
R5F6 4.7K
R5E6 4.7K
Q5H2
C5C5 MN-2200
R5A4 4.7K
R5F3 120K
Q5A5
D-FF
HA-SW
PB-C
GND
SP
COMP
CJ
GJ
PCB-HEAD AMP


TO PCB-SIGNAL(AUDIO)
SX
CX
CG
CH
GND
EDIT
GND
R-CG
SP
EE
DC40V
REC-2
GND
50/60HZ
STBY12
G-CG
ROT
4.43MHZ
D-FF
POST-CG
D.O.P
O-PB
PRE-CG
SW12
COMP-SYNC
GND
SW5
SW9
SS-V-SYNC
D-N
SKEW-SW
FE-G
FE
R5C4 1K
R5C5 10K
R5C0 100K
R5C1 100K
R5C2 100K
R5C3 100K
D5C9
R5H0 18K
R5L4 33K
R5D7 10K
D5A4
R5D8 10K
R5D5 100K
D5A3
R5D1 4.7K
5.1V
5V
0.4V
Q5D7
R5C7 10K
50/60HZ
O-MBRK
CP-FWD
PB-EE
SCK
SOT
P0
P1
P2
P3
R-ROT
FL1
I-VSYNC
SS
ES
5.1V
0V
3.5V
4.8V
0.1V
0V
0V
5V
0V
5V
5.1V
5V
0V
0V
SI
CP-FG
RIS
I-CTL
I-CON
O-HPLS
PR-VSYNC
O-CROT
SS-VSYNC
I-FF
CNVSS
RES
X IN
X OUT
VSS
0~ 0.5V
2~ 3V
0V
5V
0V
0V
0V
4.8V
2.3V
2.3V
R5A0 1K
R5C8 2.2K
L5A6 .33μH
L5A5 .33μH
R5B3 1M
L5A4 .56μH
CF5A0 CSTB.00MT
Q5A7 2SC1740S-E
5V
0V
R5L0 22K
C5G0 50V 1μ
C5G3 MN-.01
R5L1 3.9K
R5L2 5.6K
C5G4 16V .01
SC
D5C0
R5G6 100K
C5F7 270
C5E3 50V 1μ
ONLY FOR HS-MS7
R5D2 10K
Q5D2
R5P9 68K
D5C5
L5A0 100μH
C5B2 16V 100μ
D5B4
R5N4 470K
C5D3 6800
SC
R5N3 4.7K
R5N5 47K
R5B1 12K
R5B2 12K
D5D2
R5E6 4.7K
Q5H2
R5A4 4.7K
C5C6 16V 100μ
IC5A1 TC4030BP /MC14070BCP
5V
5.1V
0V
4.9V
5.1V
5.1V
4.6V
0.3V
1~ 3V
1~ 3V
R5H4 2.2K
C5C1 .01
MF
Q5B5
6V
0V
R5D6 3.3K
R5H5 2.2K
Q5D6
Q5D3
0.2V
5.1V
2~4V
R5H6 120K
R5H7 3.3K

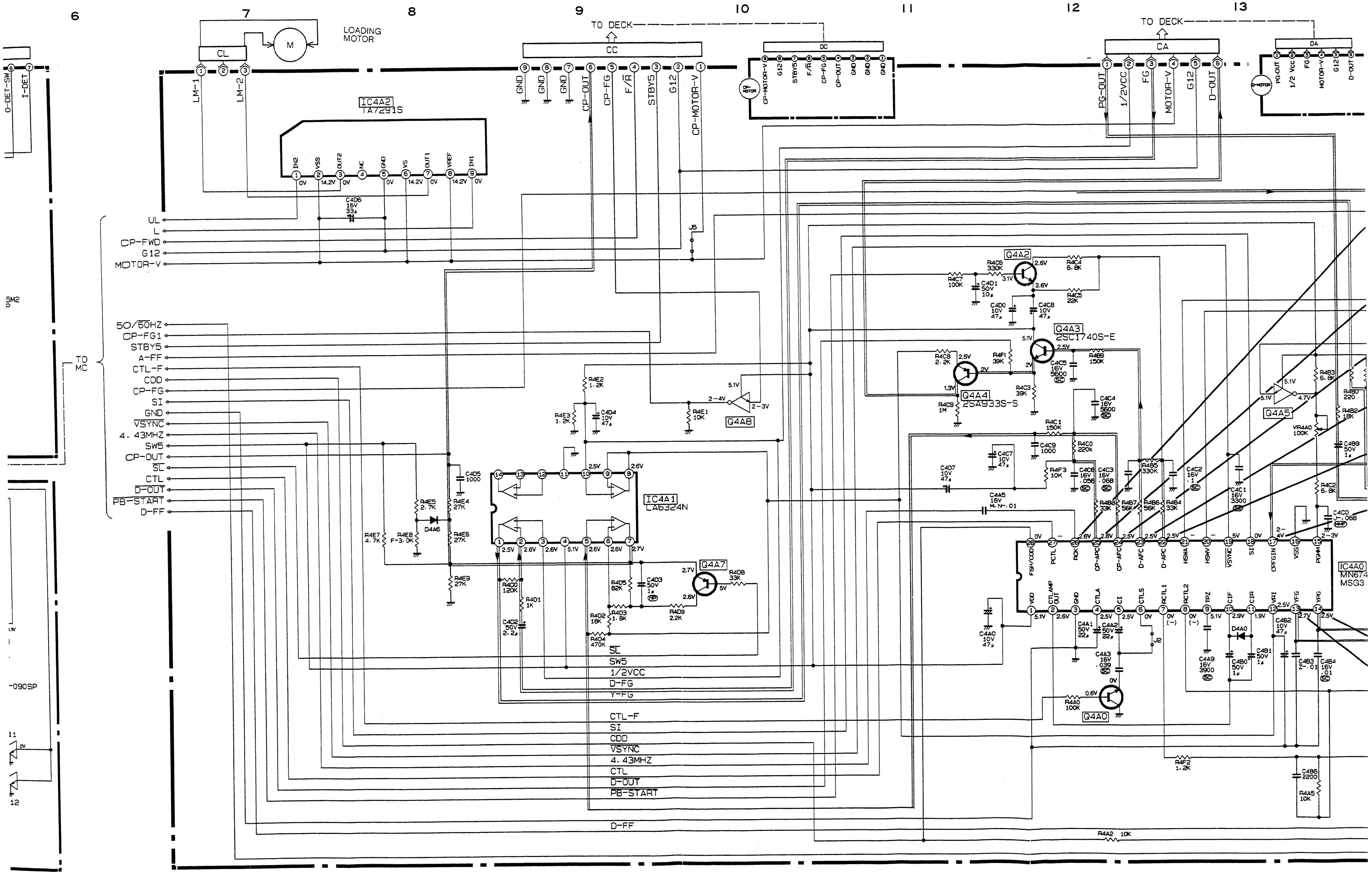

PCB-SIGNAL(Y)
SH
CH
TO PCB-SIGNAL(AUDIO)
SX
CX
PCB-POWER
PD
CD
TO DECK
CI
ONLY FOR HS-MS7
O-PB
PRE-CG
SW12
COMP-SYNC
GND
SW5
SW9
SS-V-SYNC
D-N
SKEW-SW
FE-G
FE
G12
MOTOR-V
SW12
SW9
STBY12
SW5
DC6V
GND
GND
GND
SP
60HZ
A-FF
HIFI-ENV
SW12
EE
I-DET
DET-SW
NTSC-LP
BB
TU-SENS
SU-SENS
PB
RMN-SCK
RMN-SA
RMN-SB
CTL
SW9
SW5
STBY5
RESET
CP-FG
TO REMAIN
R5L4 3.3K
R5D7 10K
D5A4
R5D8 10K
R5D5 100K
D5A3
R5D1 4.7K
0.4V
5.1V
5V
Q5D7
R5K2 10K
Q5A7
2SC1740S-E
5V
0V
R5L0 22K
C5G0 50V 1μ
R5L1 3.9K
C5G3 MN-.01
R5L2 5.6K
C5G4 16V .01
D5C0
R5G6 100K
C5E3 50V 1μ
R5H4 15.0K
UL
L
CP-FWD
G12
MOTOR-V
50/60HZ
CP-FG1
STBY5
A-FF
CTL-F
CDD
CP-FG
SI
GND
VSYNC
4.43MHZ
SW5
CP-OUT
SL
CTL
D-OUT
PB-START
D-FF
TO SERVO
ONLY FOR HS-MS7
R5D2 10K
Q5D2
D5C1
Q5C5
2SC2058S-N, P
(2.9V) 2.2V
5.1V
R5S7 1K
1.8V (2.6V)
R5S9 3.3K
C5C6 16V 100μ
5V
5.1V
0V
4.9V
5.1V
IC5A1
TC4030BP
/MC14070BCP
5.1V
4.6V
0.3V
1~3V
1~3V
R5H5 2.2K
Q5D6
Q5D3
0.2V
5.1V
2~4V
R5H7 3.3K
R5H6 120K
Q5D5
R5H8 2.2K
2~4V
Q5D4
R5H9 120K
2~3V
2~4V
Q5D1
R5H4 2.2K
C5C1 .01
Q5B5
6V
0V
R5D6 3.3K
PB-EE
60HZ
50HZ
POST-CG
SW5
G-CG
R-CG
O-BB
STBY5
VSYNC
COMP-SYNC
EDIT
CG-SCK
RESET
CG-CS
CG-DATA
EE
PRE-CG
TO CG


PD
CD
TO DECK
CI
ONLY FOR HS-MS7
G12
MOTOR-V
SW12
SW9
STBY12
SW5
DC6V
GND
GND
GND
SP
60HZ
A-FF
HIFI-ENV
SW12
EE
I-DET
DET-SW
NTSC-LP
BB
TU-SENS
SU-SENS
PB
RMN-SCK
RMN-SA
RMN-SB
CTL
SW9
SW5
STBY5
RESET
CP-FG
TO REMAIN
R5K2 10K
UL
L
CP-FWD
G12
MOTOR-V
50/60HZ
CP-FG1
STBY5
A-FF
CTL-F
CDD
CP-FG
SI
GND
VSYNC
4.43MHZ
SW5
CP-OUT
SL
CTL
D-OUT
PB-START
D-FF
TO SERVO
R5M4 15.0K
D5C1
Q5C5
2SC2058S-N, P
R5S7 1K
(2.9V) 2.2V
5.1V
1.8V (2.6V)
R5S9 3.3K
R5H5 2.2K
Q5D6
Q5D3
0.2V
5.1V
R5H6 120K
2-4V
R5H7 3.3K
Q5D5
R5H8 2.2K
2-4V
Q5D4
R5H9 120K
2-3V
2-4V
Q5D1
PB-EE
60HZ
50HZ
POST-CG
SW5
G-CG
R-CG
O-BB
STBY5
VSYNC
COMP-SYNC
EDIT
CG-SCK
RESET
CG-CS
CG-DATA
EE
PRE-CG
TO CG

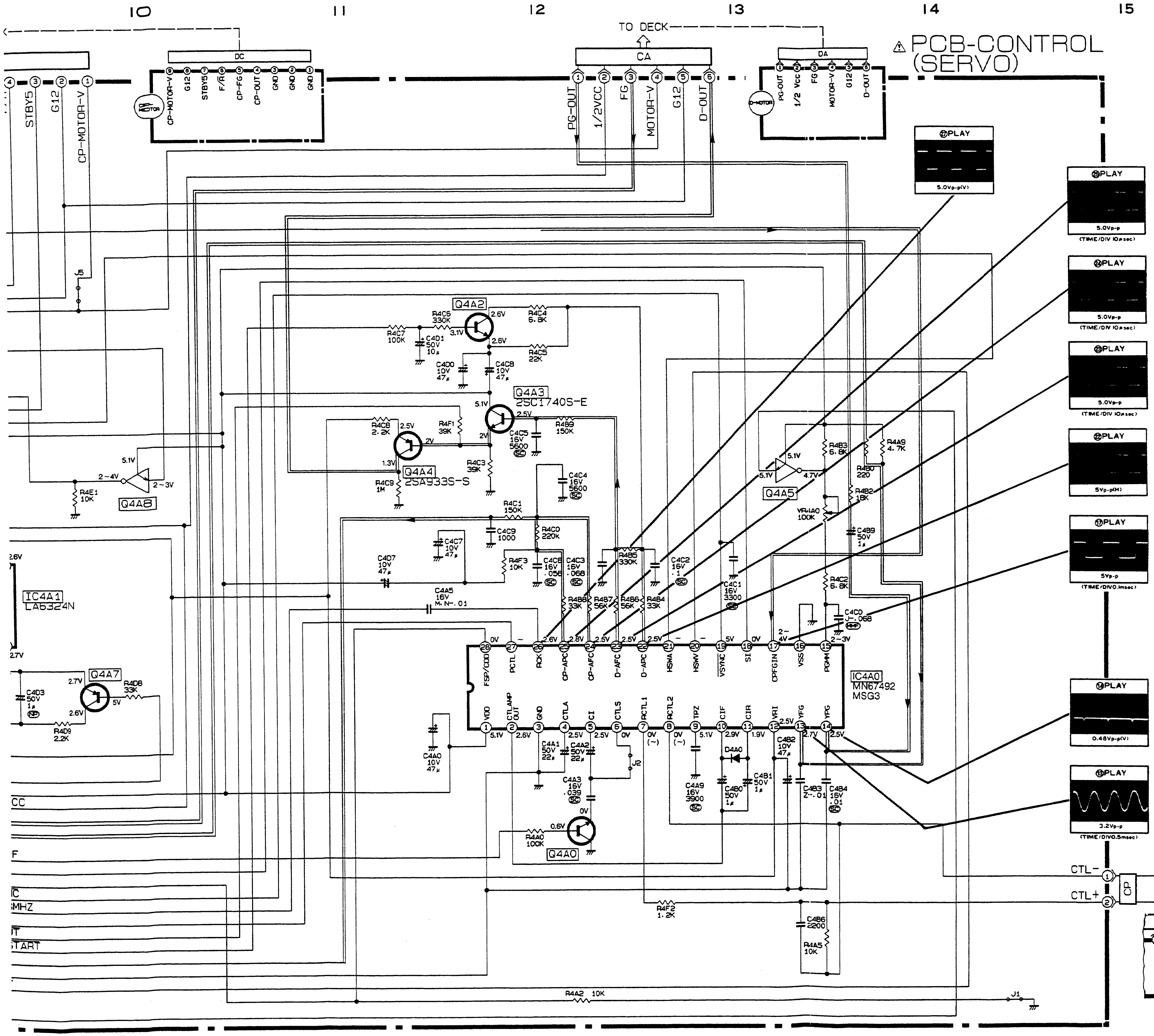
 
1
2
3
4
5
6
7
8
A
B
C
D
E
PCB-HIFI HU
C
CU
PCB-CONTROL
(REMAIN)
PCB-TIMER TY
CY
LOADING MOTOR
M
CL
L-ACT
R-ACT
LIN-H
EE
A-FF
SW12
HIFI-ENV
60HZ
A-L-L
A-L-R
SP
O-PAL
O-SECAM
O-MESECAM
O-3.58NTSC
O-4.43NTSC
O-DET-SW
I-DET
LM-1
LM-2
IC4A2
TA7291S
IN2
VSS
OUT2
NC
GND
VS
OUT1
C4D6 16V 33μ
UL
L
CP-FWD
G12
MOTOR-V
TO MC
50/60HZ
CP-FG1
STBY5
A-FF
CTL-F
CDD
CP-FG
SI
GND
VSYNC
4.43MHZ
SW5
CP-OUT
SL
CTL
D-OUT
PB-START
D-FF
R4E5 2.7K
D4A6
R4E7 4.7K
R4E8 F-3.0K
SP
B
60HZ
A-FF
HIFI-ENV
SW12
EE
I-DET
DET-SW
NTSC-LP
BB
TU-SENS
SU-SENS
PB
RMN-SCK
RMN-SA
RMN-SB
CTL
SW9
SW5
STBY5
RESET
CP-FG
TO MC
D5Z0-D5Z3 1SS252
IC5Z1
M5223P
IC5Z0
M34225M2
-125SP
CF5Z0 4.0MHZ
R5Y7 1M
L5Z0 10μH
C5Z0 16V 100μ
R5Z2 8.2K
R5Z3 8.2K
R5Z4 10K
R5X8 33K
R5X9 33K
R5X7 100K
R5X6 3.3K
R5X0 10K
R5X1 10K
R5X2 10K
R5X3 10K
R5X4 10K
R5Z0 10K
R5Z1 10K
R5Y4 3.3K
J1
J2
J3
J4
J5
J6
A
⚠PCB-CONTROL
(CG)
All diods are 1SS252 unless otherwise specified
All NPN transistors are 2SC3311A-R.S/2SC1740S-R.S unless otherwise specified
All PNP transistors are 2SA1309A-R.S/2SA933S-R.S unless otherwise specified
PB-EE
60Hz
50Hz
POST-CG
SW5
G-CG
R-CG
O-BB
STBY5
VSYNC
COMP-SYNC
EDIT
CG-SCK
RESET
CG-CS
CG-DATA
EE
PRE-CG
TO MC
Q513
2SC1740S-E
Q514
2SC1740S-E
X502 14.3MHz
X501 17.73MHz
IC501
M50455-090SP
Q501
Q502
Q503
Q504
2SC1740S-E
Q506
Q507
Q508
Q509
2SC1740S-S
Q510
Q511
Q512
L501 100μH
L502 J-15μH
L503 100μH
L507 J-10μH
VC501 7.3-45P
C508 16V 100μ
C504 16V 100μ
R512 330
R513 220
R523 22K
R524 3.9K
R526 100K
R527 220K
R528 150K
R530 390
R531 47K
R532 12K
R502 3.9K
R501 3.9K
R505 1.2K
R506 5.6K
R509 3.9K
R507 1.8K
R517 2.7K
R518 910-F
R504 1K
R511 680
R503 12K
R510 680
D501
D502
D503

| SYMBOL NO. / MODELS | A AREA | B AREA | J1 | J2 | J3 | J4 | J5 | R5Z0 | R5Z1 | R5Z2 | R5Z3 | C AREA | J6 | R5X3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-MS7 | ○ | ○ | × | × | × | × | × | ○ | ○ | ○ | ○ | ○ | × | ○ |
| HS-MS5 | × | × | ○ | ○ | ○ | ○ | ○ | × | × | × | × | × | ○ | × |

○ : Employed × : Not employed

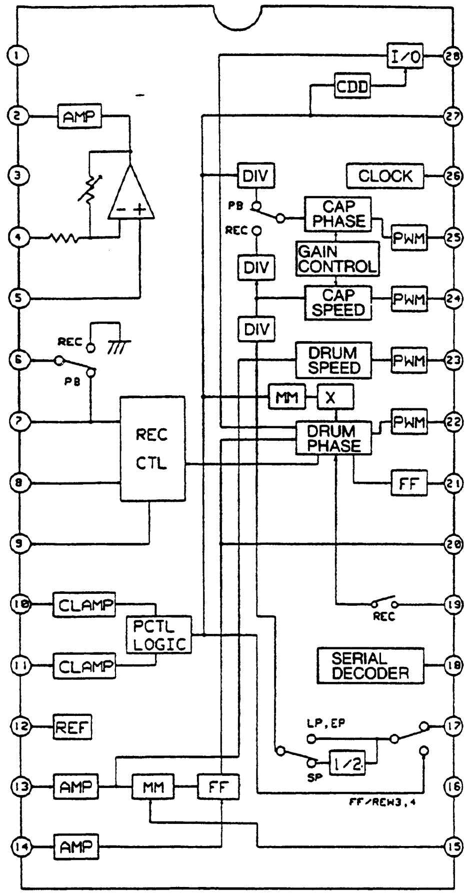

6
7
8
9
10
11
12
13
LOADING MOTOR
M
CL
LM-1
LM-2
TO DECK
CC
GND
GND
GND
CP-OUT
CP-FG
F/R
STBY5
G12
CP-MOTOR-V
DC
CP-MOTOR-V
G12
STBY5
F/R
CP-FG
CP-OUT
GND
GND
GND
CA
PG-OUT
1/2VCC
FG
MOTOR-V
G12
D-OUT
DA
PG-OUT
1/2 Vcc
FG
MOTOR-V
G12
D-OUT
D-MOTOR
O-DET-SW
I-DET
IC4A2
TA7291S
IN2
VSS
OUT2
NC
GND
VS
OUT1
VREF
IN1
C4D6 16V 33μ
UL
L
CP-FWD
G12
MOTOR-V
J5
TO MC
50/60HZ
CP-FG1
STBY5
A-FF
CTL-F
CDD
CP-FG
SI
GND
VSYNC
4.43MHZ
SW5
CP-OUT
SL
CTL
D-OUT
PB-START
D-FF
IC4A1
LA6324N
Q4A7
Q4A8
Q4A2
Q4A3
2SC1740S-E
Q4A4
2SA933S-S
Q4A5
Q4A0
IC4A0
MN674
MSG3
FSP/COD
PCTL
RCK
CP-APC
CP-AFC
D-AFC
D-APC
HSWA
HSW
VSYNC
SI
CPFGIN
VSS
PGMM
VDD
CTL AMP OUT
GND
CTLA
CI
CTLS
PCTL1
PCTL2
TPZ
CIF
CIR
VRI
YFG
YPG
D4A0
D4A6
J2
SL
SW5
1/2VCC
D-FG
Y-FG
CTL-F
SI
CDD
VSYNC
4.43MHZ
CTL
D-OUT
PB-START
D-FF
R4A2 10K
R4F2 1.2K
C4B6 2200
R4A5 10K
-090SP

# ⚠PCB-CONTROL (SERVO)



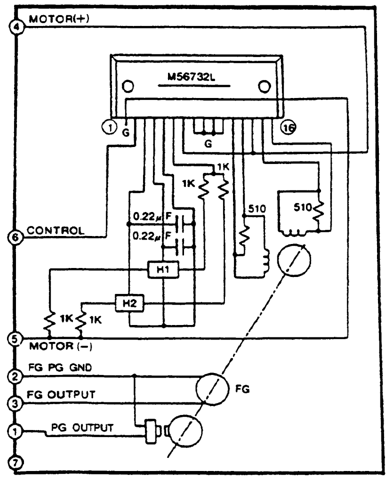
10
11
12
13
14
15
TO DECK
DC
CA
DA
STBY5
G12
CP-MOTOR-V
CP-MOTOR-V
G12
STBY5
F/R
CP-FG
CP-OUT
GND
GND
GND
PG-OUT
1/2VCC
FG
MOTOR-V
G12
D-OUT
D-MOTOR
PG-OUT
1/2 Vcc
FG
MOTOR-V
G12
D-OUT
Q4A2
R4C6 330K
R4C7 100K
C4D1 50V 10μ
R4C4 6.8K
R4C5 22K
C4D0 10V 47μ
C4C8 10V 47μ
Q4A3
2SC1740S-E
R4C8 2.2K
R4F1 39K
C4C5 16V 5600
R4B9 150K
Q4A4
2SA933S-S
R4C9 1M
R4C3 39K
C4C4 16V 5600
R4E1 10K
Q4A8
R4C1 150K
C4C9 1000
R4C0 220K
C4C7 10V 47μ
C4D7 10V 47μ
R4F3 10K
C4C6 16V .056
C4C3 16V .068
R4B5 330K
C4C2 16V .1
C4C1 16V 3300
C4A5 16V M・N-.01
R4B8 33K
R4B7 56K
R4B6 56K
R4B4 33K
Q4A5
VR4A0 100K
R4B3 6.8K
R4A9 4.7K
R4B0 220
R4B2 18K
C4B9 50V 1μ
R4C2 6.8K
C4C0 -.068
IC4A1
LA6324N
Q4A7
C4D3 50V 1μ
R4D8 33K
R4D9 2.2K
IC4A0
MN67492
MSG3
FSP/COD
PCTL
RCK
CP-APC
CP-AFC
D-AFC
D-APC
HSWA
HSWV
VSYNC
SI
CPFGIN
VSS
PGMM
VDD
CTL AMP OUT
GND
CTLA
CI
CTLS
RCTL1
RCTL2
TPZ
C1F
C1R
VRI
YFG
YFG
C4A0 10V 47μ
C4A1 50V 22μ
C4A2 50V 22μ
C4A3 16V .039
J2
D4A0
C4A9 16V 3900
C4B0 50V 1μ
C4B1 50V 1μ
C4B2 10V 47μ
C4B3 Z-.01
C4B4 16V .01
Q4A0
R4A0 100K
R4F2 1.2K
C4B6 2200
R4A5 10K
R4A2 10K
J1
J5
CTL-
CTL+
CP
CTL
CC
F
MHZ
T
START
⑳PLAY 5.0Vp-p(V)
㉖PLAY 5.0Vp-p (TIME/DIV 10μsec)
㉔PLAY 5.0Vp-p (TIME/DIV 10μsec)
㉓PLAY 5.0Vp-p (TIME/DIV 10μsec)
㉒PLAY 5Vp-p(H)
⑰PLAY 5Vp-p (TIME/DIV0.1msec)
⑭PLAY 0.48Vp-p(V)
⑬PLAY 3.2Vp-p (TIME/DIV0.5msec)

IC4A0



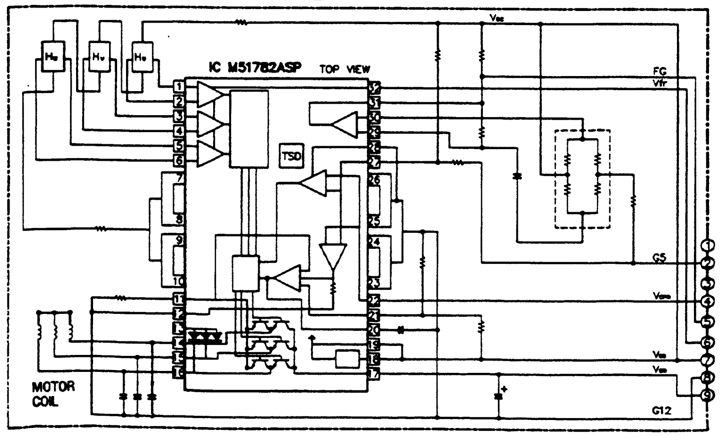
I/O
CDD
AMP
DIV
CLOCK
PB
REC
CAP PHASE
PWM
GAIN CONTROL
CAP SPEED
DRUM SPEED
MM
X
DRUM PHASE
FF
REC CTL
CLAMP
PCTL LOGIC
SERIAL DECODER
REF
LP, EP
SP
1/2
FF/REW3, 4

## DRUM MOTOR



MOTOR(+)
M56732L
G
CONTROL
1K
510
H1
H2
MOTOR(−)
FG PG GND
FG OUTPUT
PG OUTPUT
FG

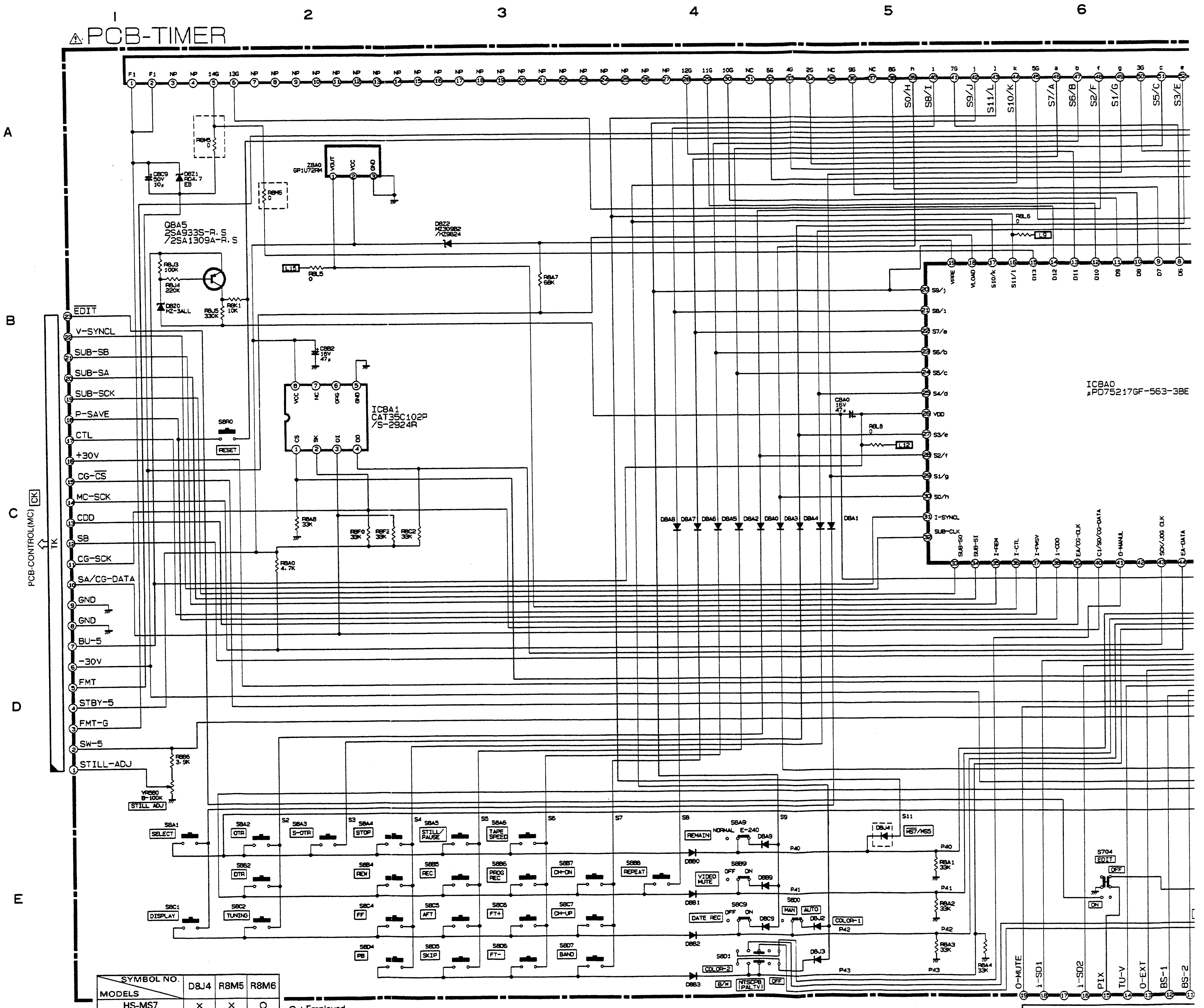
## CAPSTAN MOTOR



IC M51782ASP TOP VIEW
TSD
MOTOR COIL
FG
Vcc
G5
G12

HS-MS5
HS-MS7(4/5)

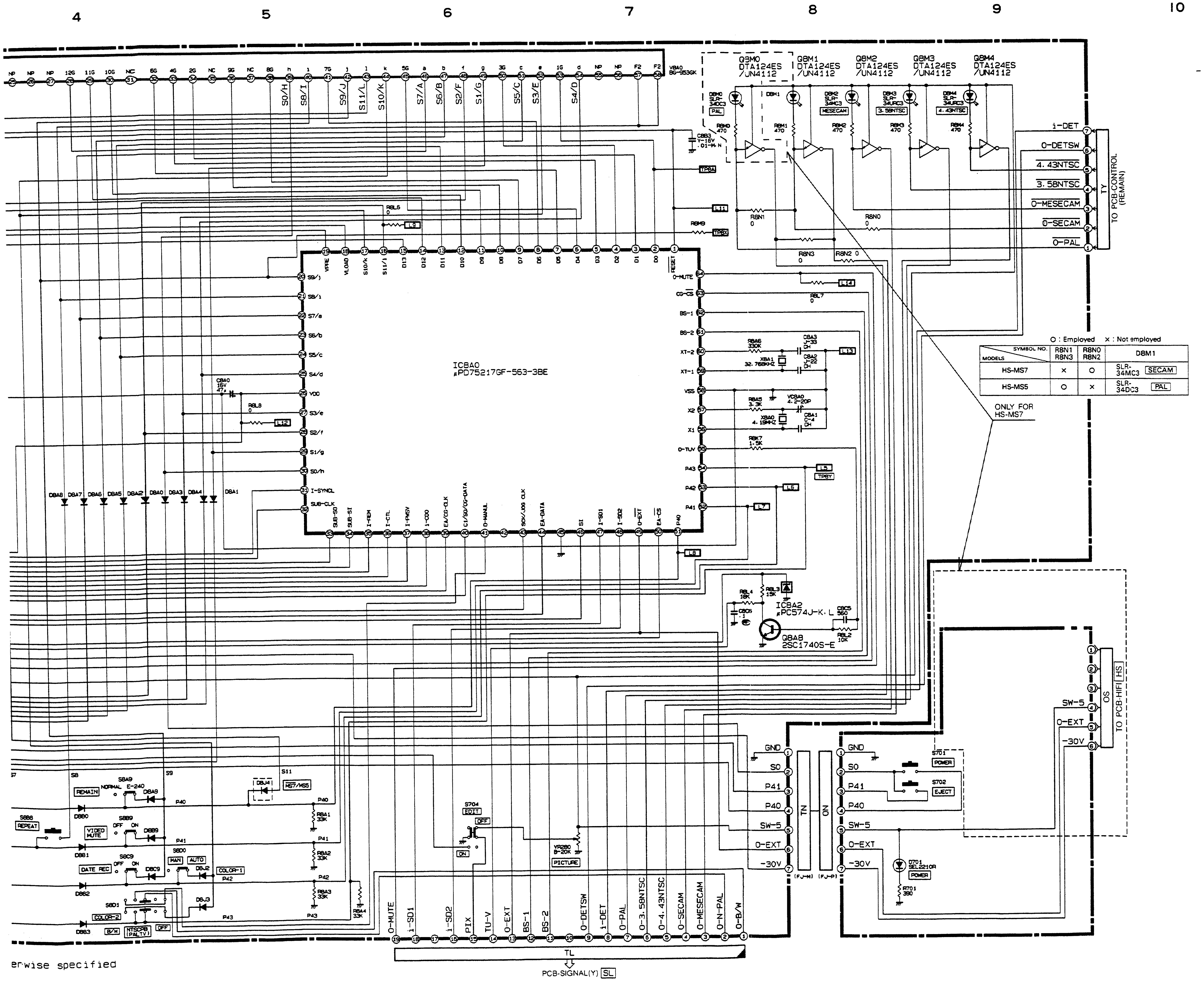
## ⚠ PCB-TIMER


1
2
3
4
5
6
A
B
C
D
E
PCB-CONTROL(MC) CK
TK
EDIT
V-SYNCL
SUB-SB
SUB-SA
SUB-SCK
P-SAVE
CTL
+30V
CG-CS
MC-SCK
CDD
SB
CG-SCK
SA/CG-DATA
GND
GND
BU-5
-30V
FMT
STBY-5
FMT-G
SW-5
STILL-ADJ
Q8A5
2SA933S-R.S
/2SA1309A-R.S
R8J3 100K
R8J4 220K
D8Z0 HZ-3ALL
R8J5 330K
R8K1 10K
C8C9 50V 10μ
D8Z1 RD4.7 EB
R8M5 0
R8M6 0
Z8A0 GP1U72RM
VOUT
VCC
GND
D8Z2 MZ309B2 /HZ9B24
R8L5 0
L15
R8A7 68K
C8B2 16V 47μ
IC8A1
CAT35C102P
/S-2924R
VCC
NC
ORG
GND
CS
SK
DI
DO
S8A0
RESET
R8A8 33K
R8F0 33K
R8F2 33K
R8C2 33K
R8A0 4.7K
R8B6 3.9K
VR580 B-100K
STILL ADJ
IC8A0
μPD75217GF-563-3BE
C8A0 16V 47μ
R8L8 0
L12
R8L6 0
L9
D8A8
D8A7
D8A6
D8A5
D8A2
D8A0
D8A3
D8A4
D8A1
S0/H
S8/I
S9/J
S11/L
S10/K
S7/A
S6/B
S2/F
S1/G
S5/C
S3/E
S9/j
S8/i
S7/a
S6/b
S5/c
S4/d
VDD
S3/e
S2/f
S1/g
S0/h
I-SYNCL
SUB-CLK
S8A1 SELECT
S8A2 OTR
S8A3 S-OTR
S8A4 STOP
S8A5 STILL/PAUSE
S8A6 TAPE SPEED
S8A9 REMAIN
NORMAL E-240
D8A9
D8J4
S11
MS7/MS5
S8B2 DTR
S8B4 REW
S8B5 REC
S8B6 PROG REC
S8B7 CH-ON
S8B8 REPEAT
S8B9 VIDEO MUTE
OFF ON
D8B9
S8C1 DISPLAY
S8C2 TUNING
S8C4 FF
S8C5 AFT
S8C6 FT+
S8C7 CH-UP
S8C9 DATE REC
D8C9
S8D0 MAN AUTO
D8J2
COLOR-1
S8D4 PB
S8D5 SKIP
S8D6 FT-
S8D7 BAND
S8D1 COLOR-2
B/W
NTSC PB (PAL TV)
OFF
D8J3
D8B0
D8B1
D8B2
D8B3
P40
P41
P42
P43
R8A1 33K
R8A2 33K
R8A3 33K
R8A4 33K
S704 EDIT
OFF
ON
O-MUTE
i-SD1
i-SD2
PIX
TU-V
O-EXT
BS-1
BS-2

| SYMBOL NO. / MODELS | D8J4 | R8M5 | R8M6 |
|---|---|---|---|
| HS-MS7 | × | × | O |
| HS-MS5 | O | O | × |

O : Employed
× : Not employed

All diodes are 1SS252 unless otherwise specified

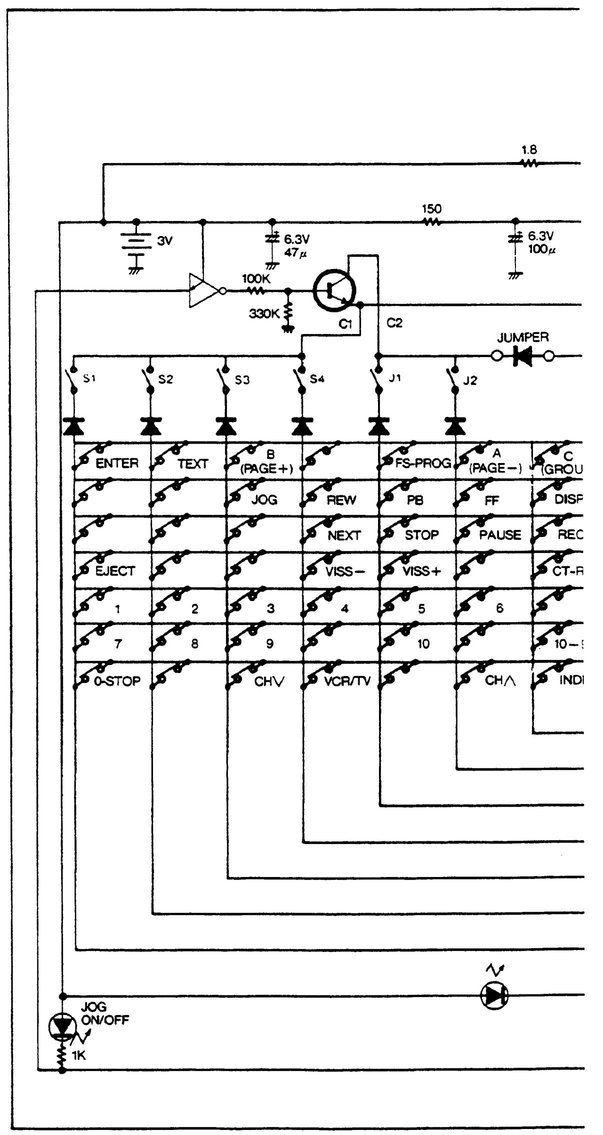

4
5
6
7
8
9
10
11
Q8M0 DTA124ES /UN4112
Q8M1 DTA124ES /UN4112
Q8M2 DTA124ES /UN4112
Q8M3 DTA124ES /UN4112
Q8M4 DTA124ES /UN4112
V8A0 BG-953GK
S0/H
S8/I
S9/J
S11/L
S10/K
S7/A
S6/B
S2/F
S1/G
S5/C
S3/E
S4/D
i-DET
O-DETSW
4.43NTSC
3.58NTSC
O-MESECAM
O-SECAM
O-PAL
TY
TO PCB-CONTROL (REMAIN)
IC8A0 μPD75217GF-563-3BE
X8A1 32.768KHZ
X8A0 4.19MHZ
IC8A2 μPC574J-K.L
Q8A8 2SC1740S-E
SW-5
O-EXT
-30V
OS
TO PCB-HIFI HS
GND
S0
P41
P40
TN
ON
S701 POWER
S702 EJECT
D701 SEL2210R POWER
R701 390
S704 EDIT
OFF
ON
VR280 B-20K PICTURE
S8B8 REPEAT
S8A9 NORMAL E-240 REMAIN
S8B9 VIDEO MUTE
S8C9 DATE REC
S8D0 MAN AUTO
COLOR-1
S8D1 COLOR-2
B/W
NTSCPB (PAL TV)
OFF
MS7/MS5
O-MUTE
i-SD1
i-SD2
PIX
TU-V
O-EXT
BS-1
BS-2
O-DETSW
i-DET
O-PAL
O-3.58NTSC
O-4.43NTSC
O-SECAM
O-MESECAM
O-N-PAL
O-B/W
TL
PCB-SIGNAL(Y) SL

O : Employed   × : Not employed

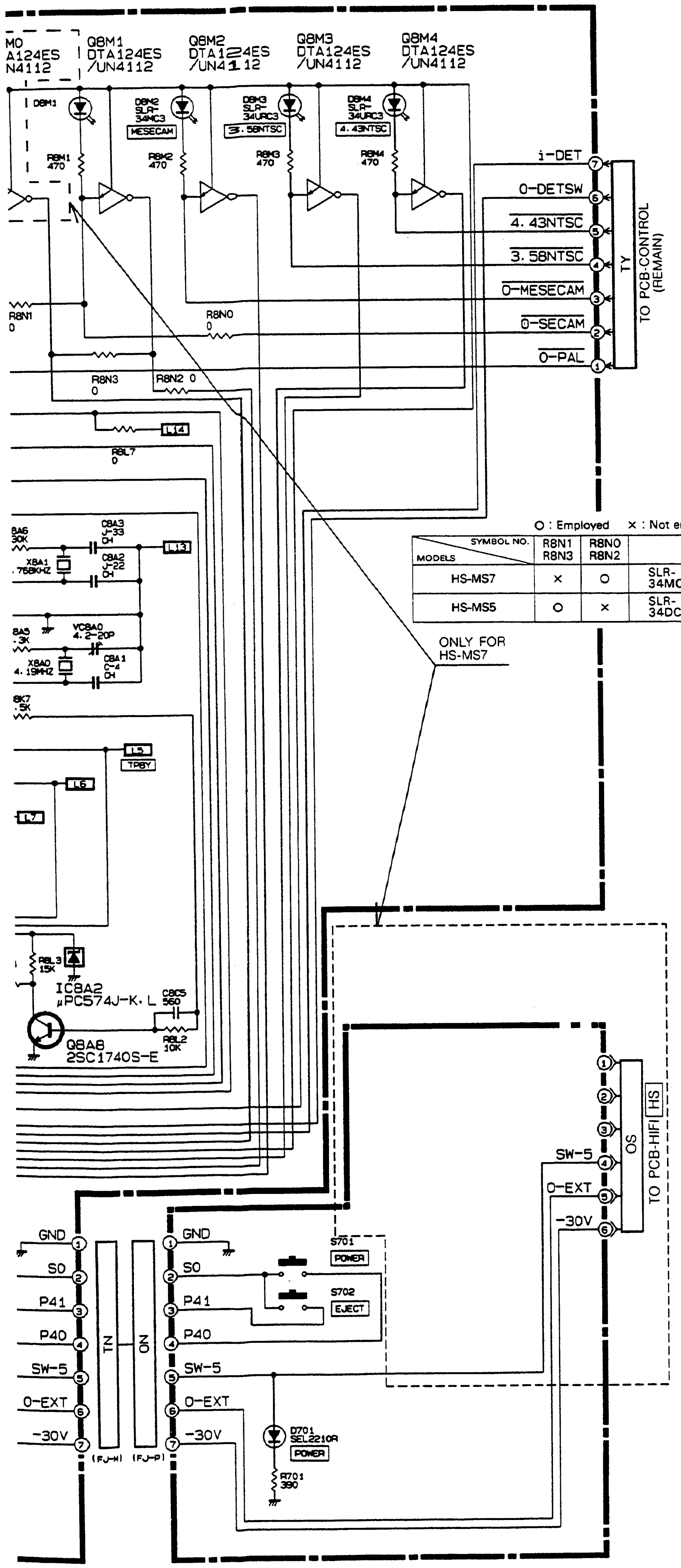
| SYMBOL NO. / MODELS | R8N1<br>R8N3 | R8N0<br>R8N2 | D8M1 |
|---|---|---|---|
| HS-MS7 | × | ○ | SLR-34MC3 SECAM |
| HS-MS5 | ○ | × | SLR-34DC3 PAL |

ONLY FOR HS-MS7

# TRANSMITTER REM


1.8
150
3V
6.3V 47μ
6.3V 100μ
100K
330K
C1
C2
JUMPER
S1
S2
S3
S4
J1
J2
ENTER
TEXT
B (PAGE+)
FS-PROG
A (PAGE−)
C (GROU
JOG
REW
PB
FF
DISP
NEXT
STOP
PAUSE
REC
EJECT
VISS−
VISS+
CT-R
1
2
3
4
5
6
7
8
9
10
10-
0-STOP
CH∨
VCR/TV
CH∧
INDE
JOG ON/OFF
1K

erwise specified

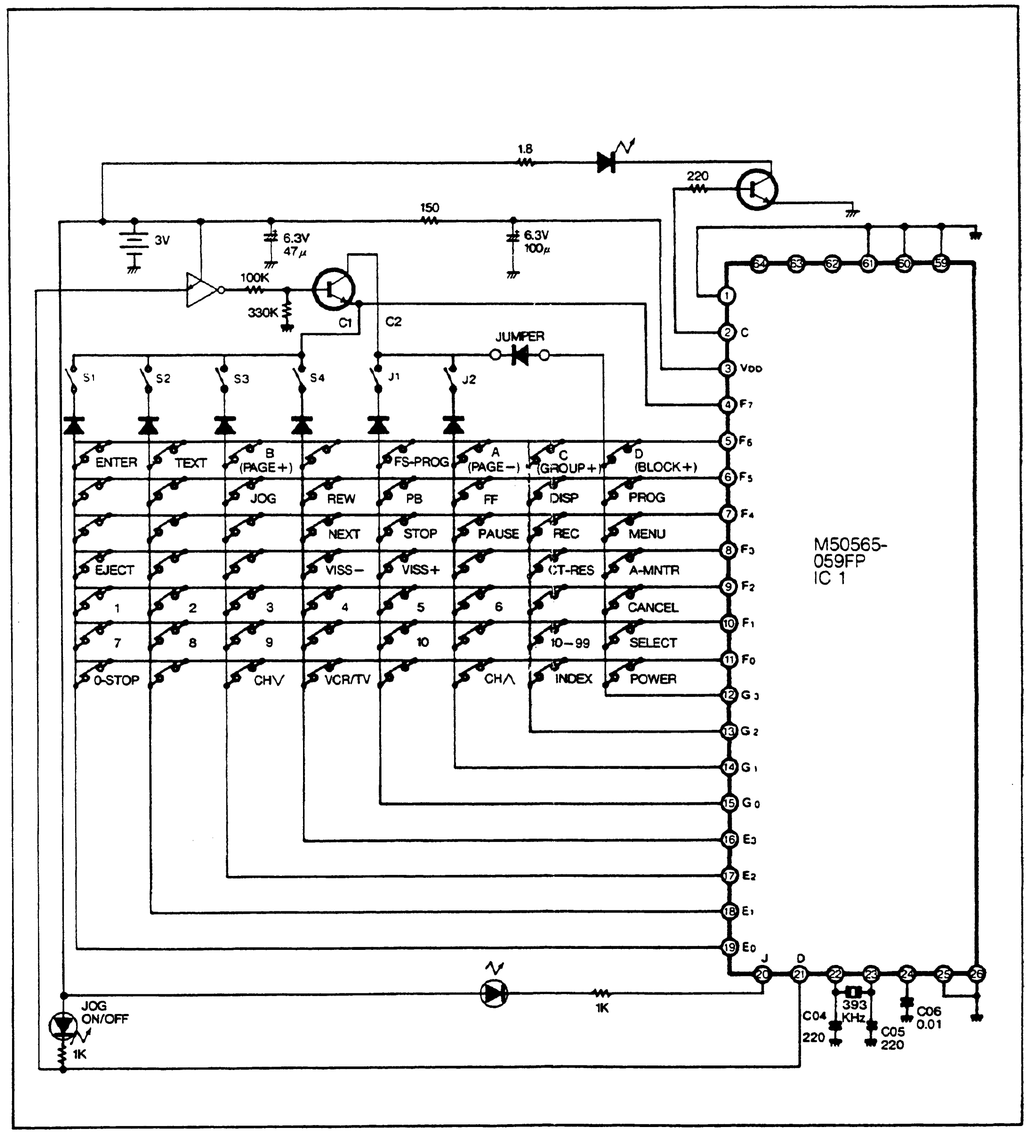

MO
A124ES
N4112
Q8M1
DTA124ES
/UN4112
Q8M2
DTA124ES
/UN4112
Q8M3
DTA124ES
/UN4112
Q8M4
DTA124ES
/UN4112
D8M1
D8M2
SLR-34MC3
MESECAM
D8M3
SLR-34URC3
3.58NTSC
D8M4
SLR-34URC3
4.43NTSC
R8M1 470
R8M2 470
R8M3 470
R8M4 470
i-DET
O-DETSW
4.43NTSC
3.58NTSC
O-MESECAM
O-SECAM
O-PAL
TY
TO PCB-CONTROL (REMAIN)
R8N1 0
R8N0 0
R8N3 0
R8N2 0
R8L7 0
L14
L13
L5
TPBY
L6
L7
X8A1
X8A0
4.19MHZ
VC8A0
4.2-20P
C8A1
C8A2
C8A3
R8L3 15K
IC8A2
μPC574J-K·L
C8C5 560
R8L2 10K
Q8A8
2SC1740S-E
ONLY FOR HS-MS7
SW-5
O-EXT
-30V
OS
HS
TO PCB-HIFI
GND
S0
P41
P40
SW-5
O-EXT
-30V
TN
ON
(FJ-H)
(FJ-P)
S701
POWER
S702
EJECT
D701
SEL2210R
POWER
R701
390

○ : Employed × : Not employed

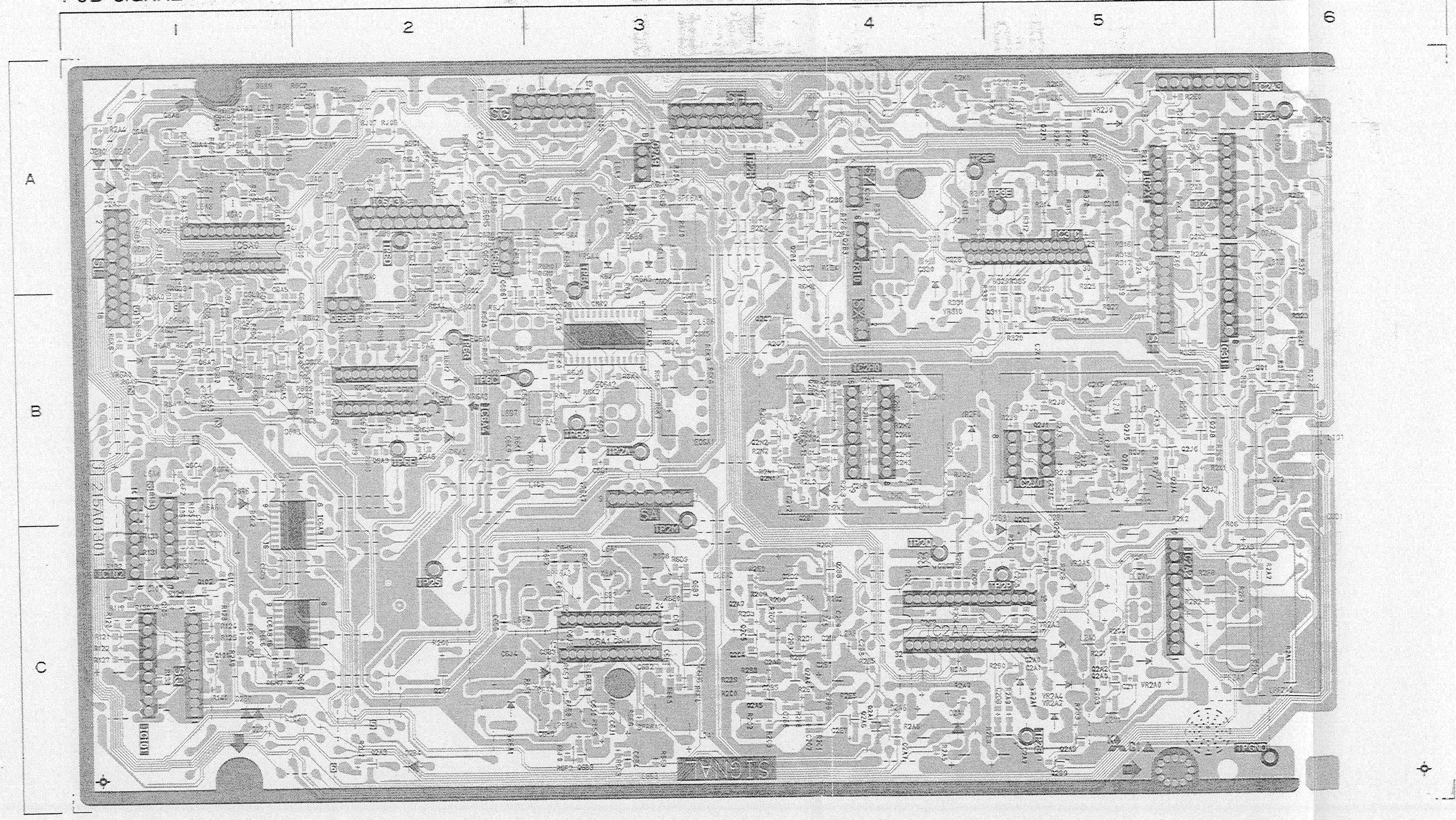
| MODELS \ SYMBOL NO. | R8N1<br>R8N3 | R8N0<br>R8N2 | D8M1 |
|---|---|---|---|
| HS-MS7 | × | ○ | SLR-34MC3 SECAM |
| HS-MS5 | ○ | × | SLR-34DC3 PAL |

ONLY FOR HS-MS7

# TRANSMITTER REMOTE CONTROL

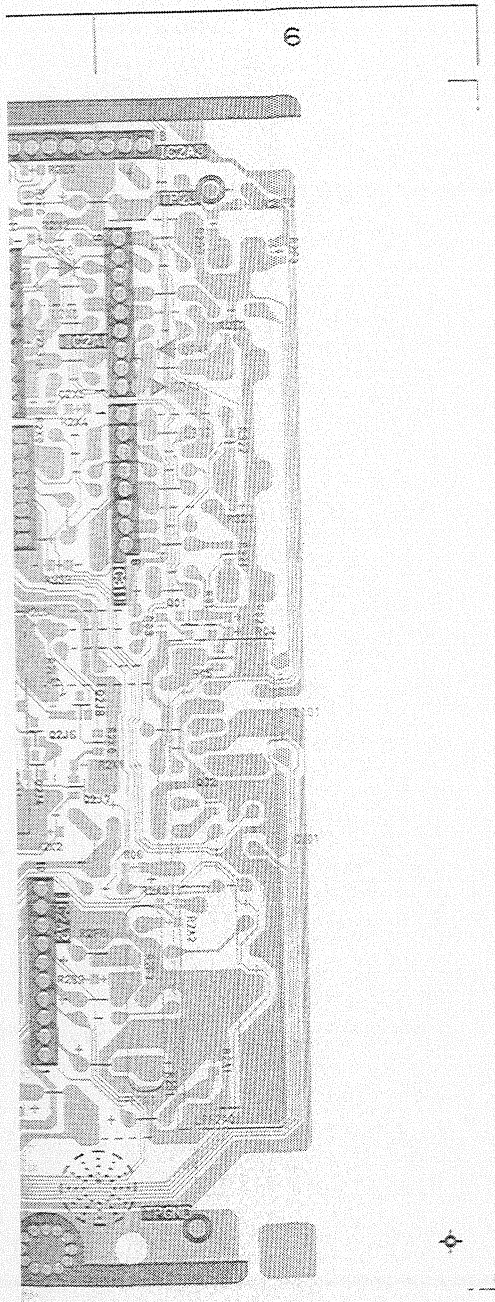

1.8
220
150
3V
6.3V 47μ
6.3V 100μ
100K
330K
C1
C2
JUMPER
S1
S2
S3
S4
J1
J2
ENTER
TEXT
B (PAGE+)
FS-PROG
A (PAGE−)
C (GROUP+)
D (BLOCK+)
JOG
REW
PB
FF
DISP
PROG
NEXT
STOP
PAUSE
REC
MENU
EJECT
VISS−
VISS+
CT-RES
A-MNTR
1
2
3
4
5
6
CANCEL
7
8
9
10
10−99
SELECT
0-STOP
CH∨
VCR/TV
CH∧
INDEX
POWER
M50565-059FP
IC 1
C
VDD
F7
F6
F5
F4
F3
F2
F1
F0
G3
G2
G1
G0
E3
E2
E1
E0
J
D
JOG ON/OFF
1K
1K
C04 220
393 KHz
C05 220
C06 0.01

## PCB-SIGNAL



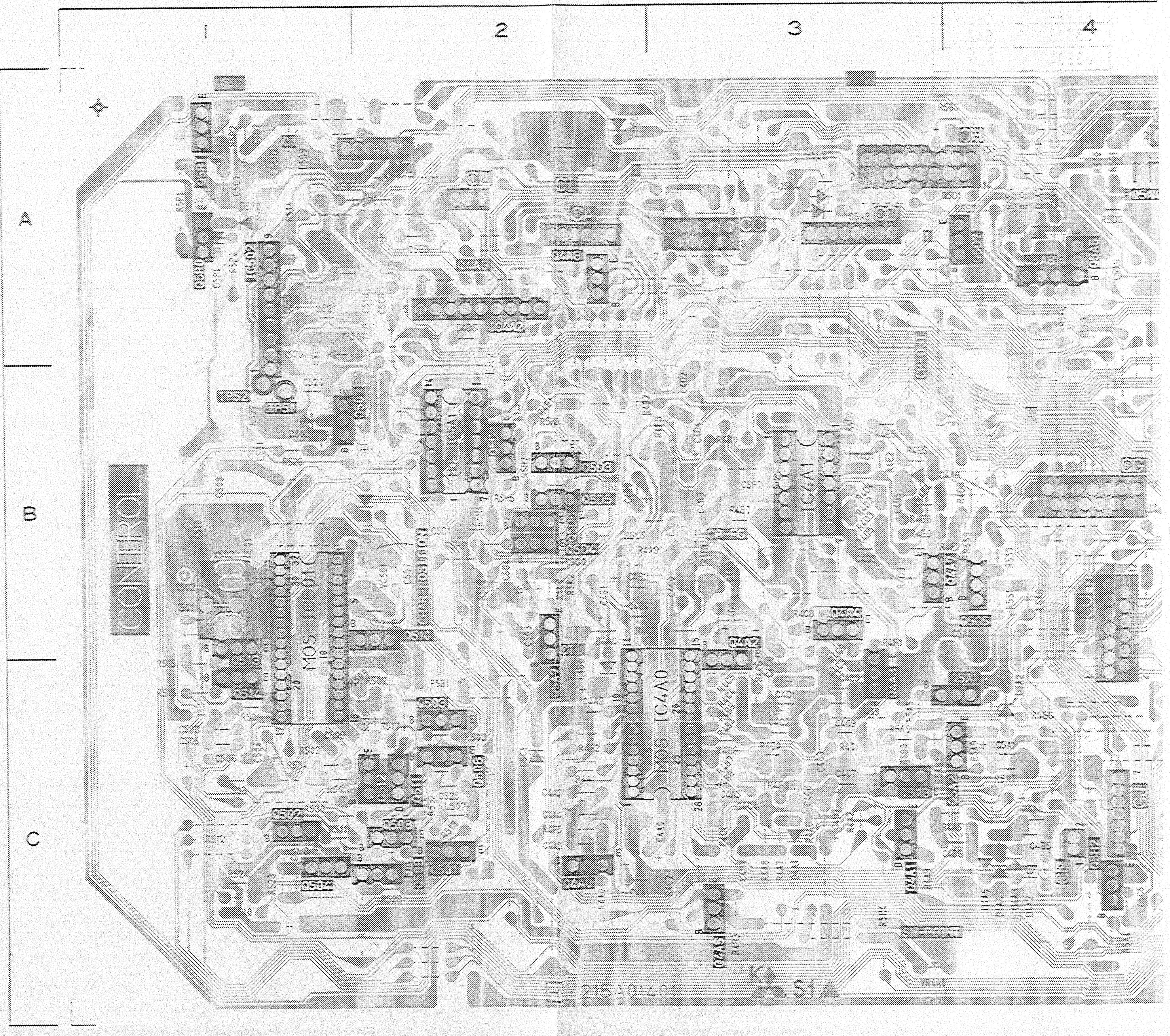
| SYMBOL NO. | ADDRESS |
|---|---|
| BPE6A5 | A-3 |
| | |
| BPF6A0 | B-1 |
| BPF6A1 | A-1 |
| BPF6A2 | C-3 |
| BPF6A3 | C-3 |
| BPF6A4 | A-3 |
| | |
| CF101 | C-1 |
| CF6A0 | A-2 |
| | |
| CU01 | C-6 |
| | |
| D2A0 | A-1 |
| D2A1 | C-4 |
| D2A2 | A-1 |
| D2A3 | A-1 |
| D2A4 | A-6 |
| D2A5 | A-6 |
| D2A6 | C-4 |
| D2A7 | A-4 |
| D2A8 | A-4 |
| D2A9 | A-5 |
| D2B0 | C-1 |
| D2B1 | C-5 |
| D2B2 | C-1 |
| D2B3 | C-5 |
| D2B4 | C-2 |
| D2N1 | B-4 |
| D2N2 | B-4 |
| D2Z0 | A-4 |
| D6A0 | A-1 |
| D6A1 | A-1 |
| D6A2 | A-1 |
| D6A3 | B-1 |
| D6A4 | C-3 |
| D6A5 | B-2 |
| D6A6 | B-1 |
| D6A7 | A-3 |
| D6A8 | A-2 |
| | |
| DL2A0 | C-5 |
| DL6A0 | A-1 |
| DL6A1 | A-2 |
| DL6A2 | C-3 |
| | |
| EQ6A0 | B-2 |
| EQ6A1 | B-3 |
| EQ6A2 | B-3 |
| | |
| IC101 | C-1 |
| IC102 | C-1 |
| IC2A0 | C-4 |
| IC2A1 | A-5 |
| IC2A2 | C-5 |
| IC2A3 | A-6 |
| IC2H0 | B-4 |
| IC2J0 | B-5 |
| IC2X1 | A-5 |
| IC310 | A-5 |

| SYMBOL NO. | ADDRESS |
|---|---|
| IC311 | B-6 |
| IC6A0 | A-1 |
| IC6A1 | C-3 |
| IC6A2 | B-3 |
| IC6A3 | A-2 |
| IC6A4 | B-2 |
| IC6A8 | C-1 |
| IC6A9 | C-2 |
| | |
| L101 | B-6 |
| L102 | C-1 |
| L103 | B-3 |
| L2A0 | C-5 |
| L2A1 | C-3 |
| L2A3 | C-4 |
| L2A4 | C-4 |
| L2A5 | C-4 |
| L2A8 | B-4 |
| L2A9 | C-4 |
| L2B0 | A-5 |
| L2H0 | B-4 |
| L2H1 | B-4 |
| L2H2 | B-4 |
| L2J0 | B-5 |
| L2J1 | B-5 |
| L2J2 | B-5 |
| L2J3 | B-5 |
| L2J4 | B-5 |
| L2J5 | B-5 |
| L2J6 | B-5 |
| L2J7 | B-5 |
| L2J8 | A-4 |
| L2J9 | A-5 |
| L2K0 | A-5 |
| L2X0 | A-5 |
| L2Y1 | C-5 |
| L310 | A-4 |
| L311 | B-5 |
| L312 | A-6 |
| L6A0 | A-2 |
| L6A1 | C-3 |
| L6A2 | A-2 |
| L6A3 | A-3 |
| L6A4 | B-1 |
| L6A5 | B-2 |
| L6A6 | B-1 |
| L6A7 | A-1 |
| L6A8 | A-1 |
| L6A9 | A-1 |
| L6B0 | A-2 |
| L6B1 | A-2 |
| L6B2 | C-3 |
| L6B3 | C-3 |
| L6B4 | C-2 |
| L6B5 | B-3 |
| L6B6 | B-3 |
| L6B7 | B-2 |
| L6B8 | A-3 |
| L6C0 | B-1 |
| L6C1 | B-1 |



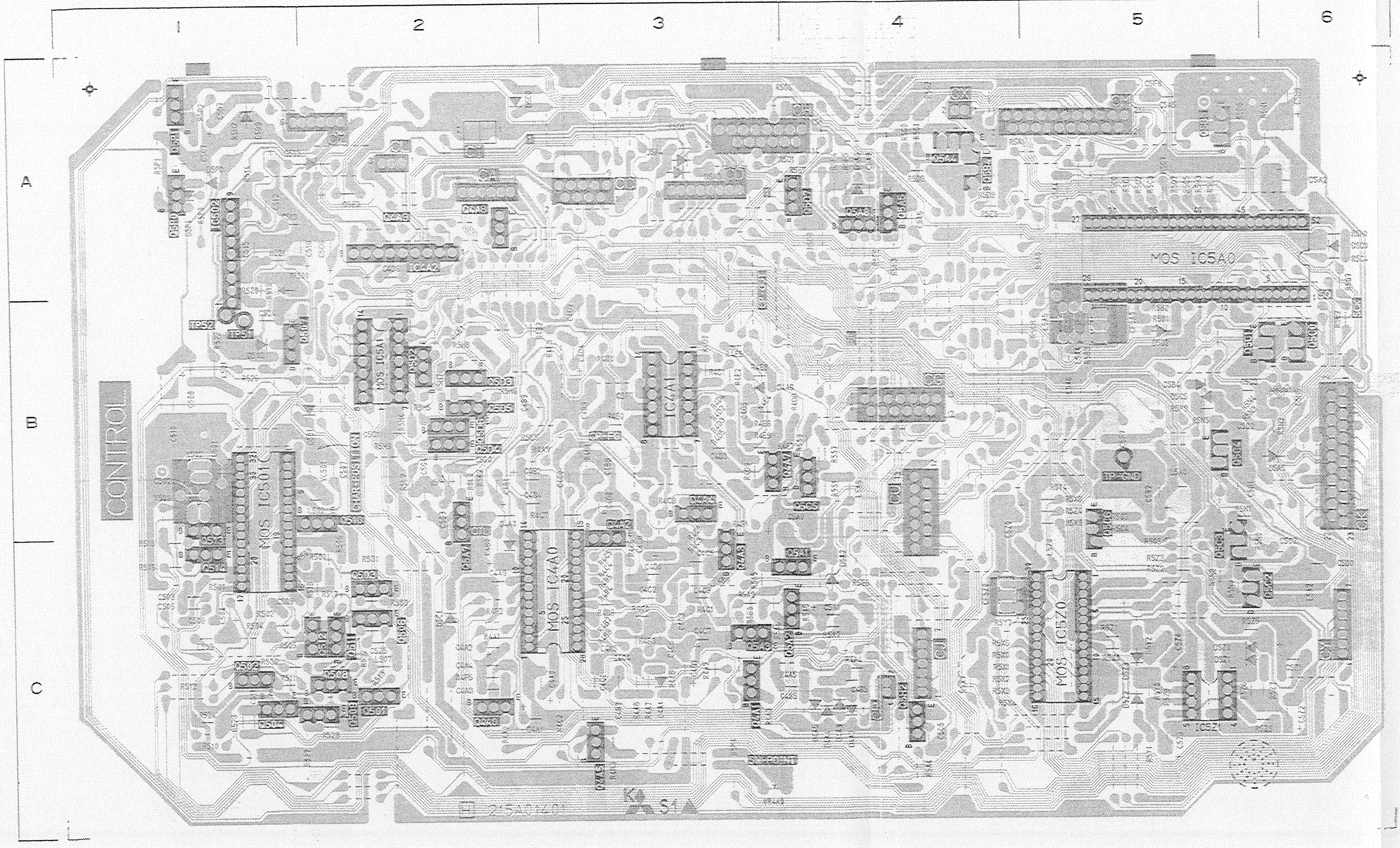
| SYMBOL NO. | ADDRESS |
|---|---|
| BPE6A5 | A-3 |
| | |
| BPF6A0 | B-1 |
| BPF6A1 | A-1 |
| BPF6A2 | C-3 |
| BPF6A3 | C-3 |
| BPF6A4 | A-3 |
| | |
| CF101 | C-1 |
| CF6A0 | A-2 |
| | |
| CU01 | C-6 |
| | |
| D2A0 | A-1 |
| D2A1 | C-4 |
| D2A2 | A-1 |
| D2A3 | A-1 |
| D2A4 | A-6 |
| D2A5 | A-6 |
| D2A6 | C-4 |
| D2A7 | A-4 |
| D2A8 | A-4 |
| D2A9 | A-5 |
| D2B0 | C-1 |
| D2B1 | C-5 |
| D2B2 | C-1 |
| D2B3 | C-5 |
| D2B4 | C-2 |
| D2N1 | B-4 |
| D2N2 | B-4 |
| D2Z0 | A-4 |
| D6A0 | A-1 |
| D6A1 | A-1 |
| D6A2 | A-1 |
| D6A3 | B-1 |
| D6A4 | C-3 |
| D6A5 | B-2 |
| D6A6 | B-1 |
| D6A7 | A-3 |
| D6A8 | A-2 |
| | |
| DL2A0 | C-5 |
| DL6A0 | A-1 |
| DL6A1 | A-2 |
| DL6A2 | C-3 |
| | |
| EQ6A0 | B-2 |
| EQ6A1 | B-3 |
| EQ6A2 | B-3 |
| | |
| IC101 | C-1 |
| IC102 | C-1 |
| IC2A0 | C-4 |
| IC2A1 | A-5 |
| IC2A2 | C-5 |
| IC2A3 | A-6 |
| IC2H0 | B-4 |
| IC2J0 | B-5 |
| IC2X1 | A-5 |
| IC310 | A-5 |
| IC311 | B-6 |
| IC6A0 | A-1 |
| IC6A1 | C-3 |
| IC6A2 | B-3 |
| IC6A3 | A-2 |
| IC6A4 | B-2 |
| IC6A8 | C-1 |
| IC6A9 | C-2 |
| | |
| L101 | B-6 |
| L102 | C-1 |
| L103 | B-3 |
| L2A0 | C-5 |
| L2A1 | C-3 |
| L2A3 | C-4 |
| L2A4 | C-4 |
| L2A5 | C-4 |
| L2A8 | B-4 |
| L2A9 | C-4 |
| L2B0 | A-5 |
| L2H0 | B-4 |
| L2H1 | B-4 |
| L2H2 | B-4 |
| L2J0 | B-5 |
| L2J1 | B-5 |
| L2J2 | B-5 |
| L2J3 | B-5 |
| L2J4 | B-5 |
| L2J5 | B-5 |
| L2J6 | B-5 |
| L2J7 | B-5 |
| L2J8 | A-4 |
| L2J9 | A-5 |
| L2K0 | A-5 |
| L2X0 | A-5 |
| L2Y1 | C-5 |
| L310 | A-4 |
| L311 | B-5 |
| L312 | A-6 |
| L6A0 | A-2 |
| L6A1 | C-3 |
| L6A2 | A-2 |
| L6A3 | A-3 |
| L6A4 | B-1 |
| L6A5 | B-2 |
| L6A6 | B-1 |
| L6A7 | A-1 |
| L6A8 | A-1 |
| L6A9 | A-1 |
| L6B0 | A-2 |
| L6B1 | A-2 |
| L6B2 | C-3 |
| L6B3 | C-3 |
| L6B4 | C-2 |
| L6B5 | B-3 |
| L6B6 | B-3 |
| L6B7 | B-2 |
| L6B8 | A-3 |
| L6C0 | B-1 |
| L6C1 | B-1 |
| | |
| LPF2A0 | C-6 |
| LPF2A1 | C-6 |
| LPF6A0 | B-1 |
| LPF6A1 | C-3 |
| LPF6A2 | B-3 |
| | |
| Q01 | B-6 |
| Q02 | B-6 |
| Q101 | C-1 |
| Q102 | C-1 |
| Q2A0 | C-5 |
| Q2A1 | C-4 |
| Q2A2 | C-5 |
| Q2A3 | C-2 |
| Q2A4 | C-4 |
| Q2A5 | C-3 |
| Q2A6 | C-4 |
| Q2A7 | C-3 |
| Q2A8 | C-5 |
| Q2A9 | A-3 |
| Q2B0 | B-4 |
| Q2B1 | C-4 |
| Q2B2 | B-4 |
| Q2B3 | A-4 |
| Q2B4 | A-4 |
| Q2B5 | A-4 |
| Q2B6 | A-4 |
| Q2B7 | C-2 |
| Q2B8 | C-4 |
| Q2B9 | C-5 |
| Q2C0 | C-5 |
| Q2C1 | C-5 |
| Q2C4 | C-3 |
| Q2C5 | C-3 |
| Q2C7 | B-4 |
| Q2J0 | B-5 |
| Q2J1 | B-5 |
| Q2J2 | A-5 |
| Q2J3 | A-5 |
| Q2J4 | B-5 |
| Q2J5 | B-5 |
| Q2J6 | B-5 |
| Q2J7 | B-5 |
| Q2J8 | B-5 |
| Q2N1 | B-4 |
| Q2N2 | B-4 |
| Q310 | A-4 |
| Q311 | B-5 |
| Q6A0 | B-1 |
| Q6A2 | B-2 |
| Q6A3 | B-2 |
| Q6A5 | B-1 |
| Q6A6 | B-2 |
| Q6A7 | B-1 |
| Q6A8 | A-1 |
| Q6A9 | A-1 |
| Q6B0 | B-1 |
| Q6B1 | B-1 |
| Q6B2 | B-1 |
| Q6B3 | C-3 |
| Q6B4 | A-2 |
| Q6B5 | B-2 |
| Q6B6 | B-2 |
| Q6B7 | C-3 |
| Q6B8 | A-2 |
| Q6B9 | A-3 |
| Q6C0 | C-1 |
| Q6C1 | A-2 |
| Q6C2 | B-3 |
| Q6C3 | A-2 |
| Q6C4 | B-1 |
| Q6C5 | C-1 |
| | |
| T6A0 | A-2 |
| | |
| TP2A | B-3 |
| TP2E | C-5 |
| TP2H | A-3 |
| TP2J | A-6 |
| TP2M | C-3 |
| TP2P | C-5 |
| TP2Q | C-4 |
| TP2S | C-2 |
| TP3E | A-5 |
| TP3F | A-4 |
| TP6A | A-3 |
| TP6B | B-3 |
| TP6C | B-2 |
| TP6D | A-2 |
| TP6E | B-2 |
| TP6G | B-2 |
| TPGND | C-6 |
| | |
| VR2A0 | C-5 |
| VR2A1 | C-5 |
| VR2A2 | C-5 |
| VR2A3 | C-5 |
| VR2A4 | C-5 |
| VR2A5 | C-5 |
| VR2F0 | B-4 |
| VR2J0 | A-5 |
| VR310 | B-4 |
| VR311 | A-5 |
| VR6A0 | B-1 |
| VR6A1 | C-2 |
| VR6A3 | B-2 |
| VR6A4 | A-3 |
| VR6A5 | A-3 |
| VR6A6 | B-2 |
| VR6A7 | B-3 |
| | |
| X2H0 | B-4 |
| X2J0 | B-5 |
| X6A0 | A-1 |
| X6A1 | C-3 |
| | |
| | |
| | |
| | |

## PCB-CONTROL



| DDRESS |
|---|
| C-3 |
| A-2 |
| B-2 |
| B-2 |
| C-3 |
| A-2 |
| A-3 |
| C-1 |
| A-2 |
| B-3 |
| A-2 |
| B-1 |
| C-1 |
| |
| A-2 |
| |
| B-3 |
| C-5 |
| A-3 |
| A-6 |
| C-3 |
| C-5 |
| C-4 |
| C-2 |
| A-5 |
| A-4 |
| A-3 |
| B-3 |
| B-2 |
| A-2 |
| B-2 |
| B-2 |
| C-6 |
| |
| C-5 |
| C-5 |
| C-5 |
| C-5 |
| C-5 |
| C-5 |
| B-4 |
| A-5 |
| B-4 |
| A-5 |
| B-1 |
| C-2 |
| B-2 |
| A-3 |
| A-3 |
| B-2 |
| B-3 |
| |
| B-4 |
| B-5 |
| A-1 |
| C-3 |
| |
| |
| |
| |

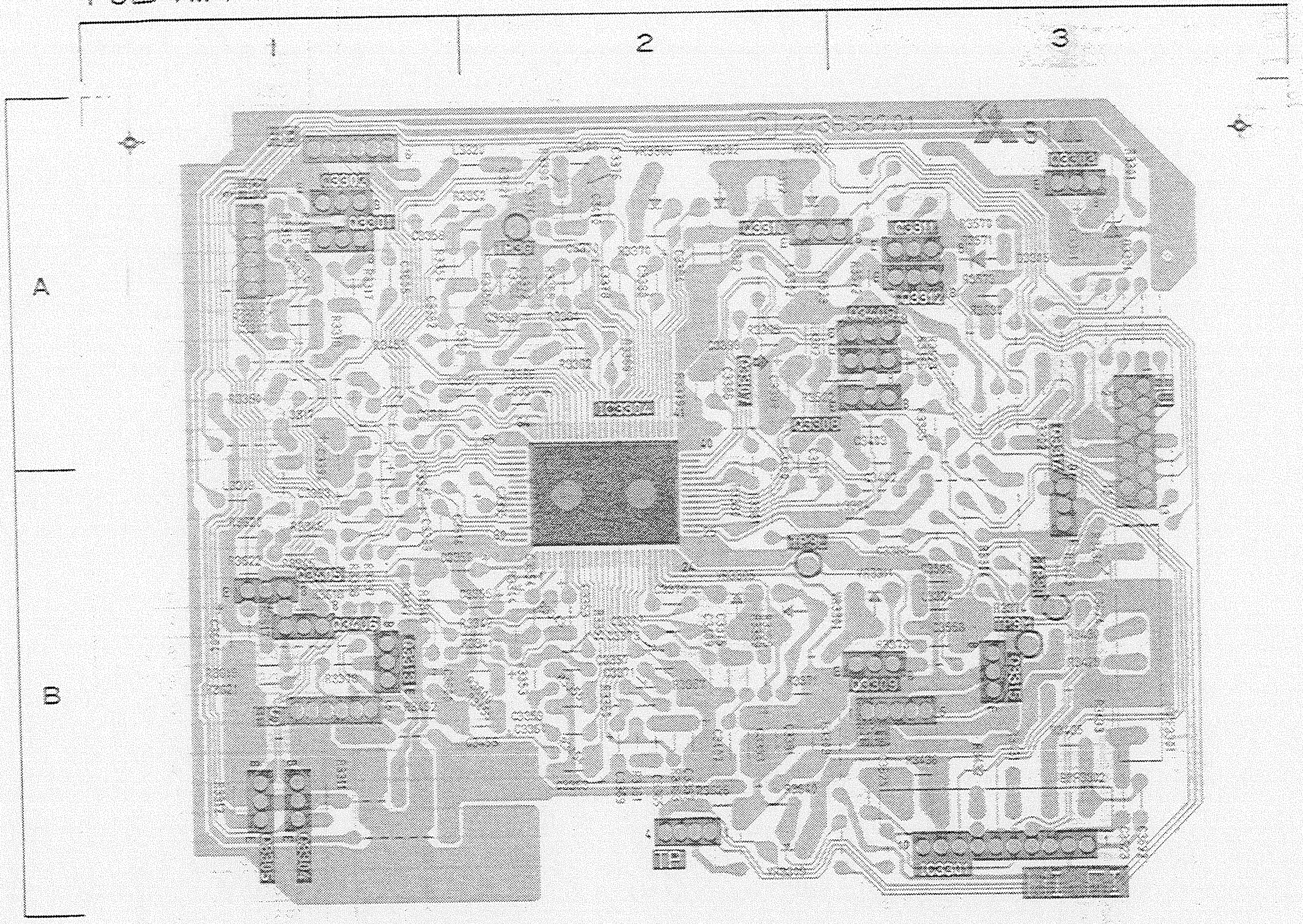
## PCB-CONTROL


1
2
3
4
5
6
A
B
C
CONTROL
MOS IC501
MOS IC4A0
MOS IC5A0
MOS IC570
IC4A1
MOS IC5A1
IC502
TP52
TP51
TP-GND
IC5Z1
S1
215A01401

| SYMBOL NO. | ADDRESS |
|---|---|
| CF5A0 | B-5 |
| CF5Z0 | C-4 |
| | |
| D4A0 | B-2 |
| D4A1 | C-3 |
| D4A2 | C-4 |
| D4A3 | C-4 |
| D4A4 | C-4 |
| D4A5 | C-4 |
| D4A6 | B-3 |
| D501 | B-2 |
| D502 | B-1 |
| D503 | A-1 |
| D5A0 | A-4 |
| D5A2 | C-4 |
| D5A3 | A-3 |
| D5A4 | A-3 |
| D5A5 | B-6 |
| D5B4 | B-5 |
| D5B9 | A-1 |
| D5C0 | A-2 |
| D5C1 | C-2 |
| D5C5 | B-5 |
| D5C9 | A-6 |
| D5D2 | B-5 |
| D5P0 | A-1 |
| D5P1 | A-1 |
| D5Z0 | C-5 |
| D5Z1 | C-5 |
| D5Z2 | C-5 |
| D5Z3 | C-5 |
| | |
| IC4A0 | C-3 |
| IC4A1 | B-3 |
| IC4A2 | A-2 |
| IC501 | B-1 |
| IC502 | A-1 |
| IC5A0 | A-5 |
| IC5A1 | B-2 |
| IC5Z0 | C-5 |
| IC5Z1 | C-5 |
| | |
| L501 | B-1 |
| L502 | B-2 |
| L503 | C-1 |
| L507 | C-2 |
| L5A0 | B-5 |
| L5A2 | C-6 |
| L5A4 | B-5 |
| L5A5 | B-5 |
| L5A6 | B-5 |
| L5A8 | B-4 |
| L5Z0 | C-5 |
| | |
| Q4A0 | C-2 |
| Q4A1 | C-3 |
| Q4A2 | B-3 |
| Q4A3 | C-3 |
| Q4A4 | B-3 |
| Q4A5 | C-3 |

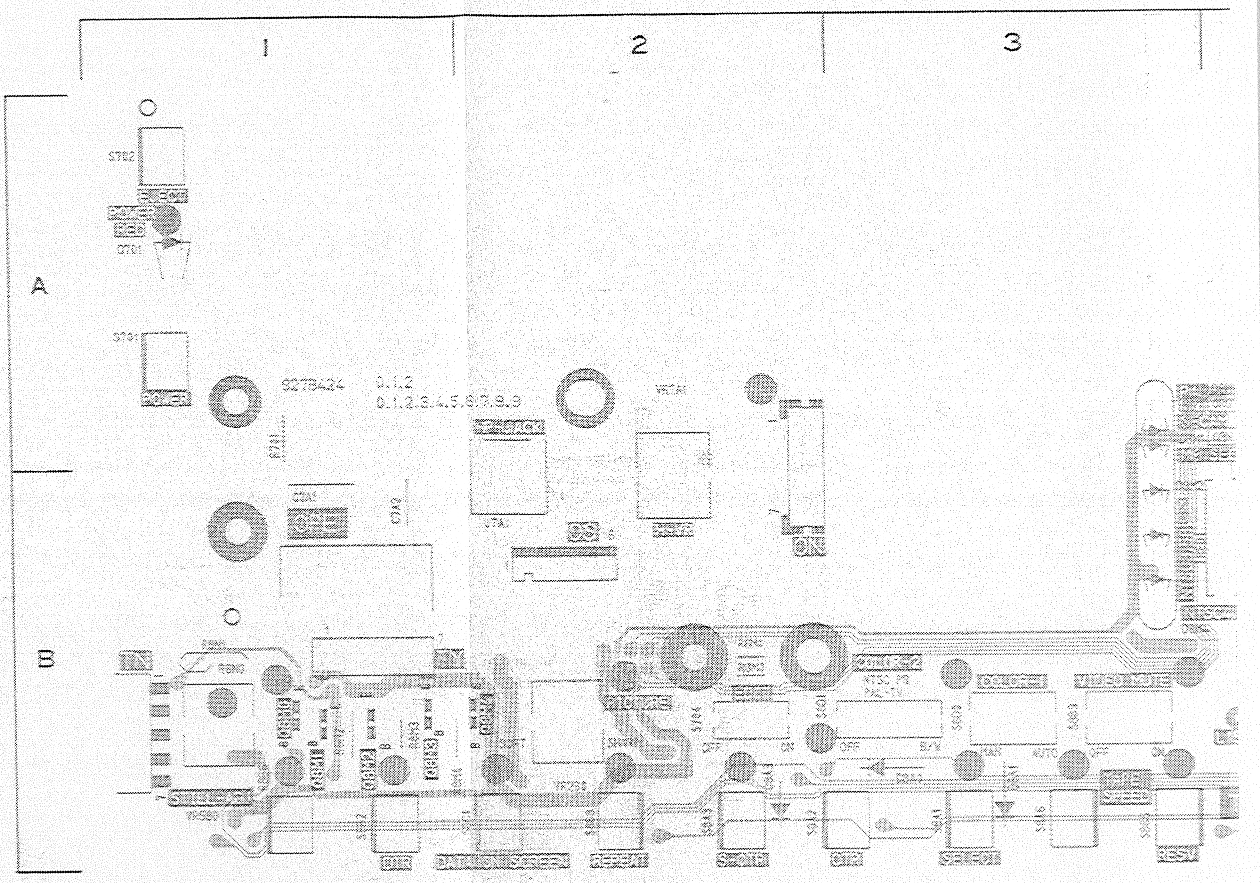
| SYMBOL NO. | ADDRESS |
|---|---|
| Q4A7 | B-4 |
| Q4A8 | A-2 |
| Q4A9 | A-2 |
| Q501 | C-2 |
| Q502 | C-1 |
| Q503 | C-2 |
| Q504 | C-1 |
| Q506 | C-2 |
| Q507 | B-1 |
| Q508 | C-2 |
| Q509 | C-2 |
| Q510 | B-2 |
| Q511 | C-2 |
| Q512 | C-2 |
| Q513 | C-1 |
| Q514 | C-1 |
| Q5A1 | C-4 |
| Q5A2 | C-4 |
| Q5A3 | C-3 |
| Q5A4 | A-4 |
| Q5A5 | A-4 |
| Q5A7 | C-2 |
| Q5A8 | A-4 |
| Q5B4 | A-4 |
| Q5B5 | A-5 |
| Q5C0 | B-6 |
| Q5C1 | B-5 |
| Q5C2 | C-6 |
| Q5C3 | C-5 |
| Q5C4 | B-5 |
| Q5C5 | B-4 |
| Q5C6 | B-5 |
| Q5D2 | B-2 |
| Q5D3 | B-2 |
| Q5D4 | B-2 |
| Q5D5 | B-2 |
| Q5D6 | B-2 |
| Q5D7 | A-4 |
| Q5H2 | C-4 |
| Q5P0 | A-1 |
| Q5P1 | A-1 |
| | |
| TP-GND | B-5 |
| TP51 | B-1 |
| TP52 | B-1 |
| | |
| VC501 | B-2 |
| | |
| VR4A0 | C-3 |
| VR501 | A-1 |
| | |
| X501 | B-1 |
| X502 | B-1 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

PCB-HIFI

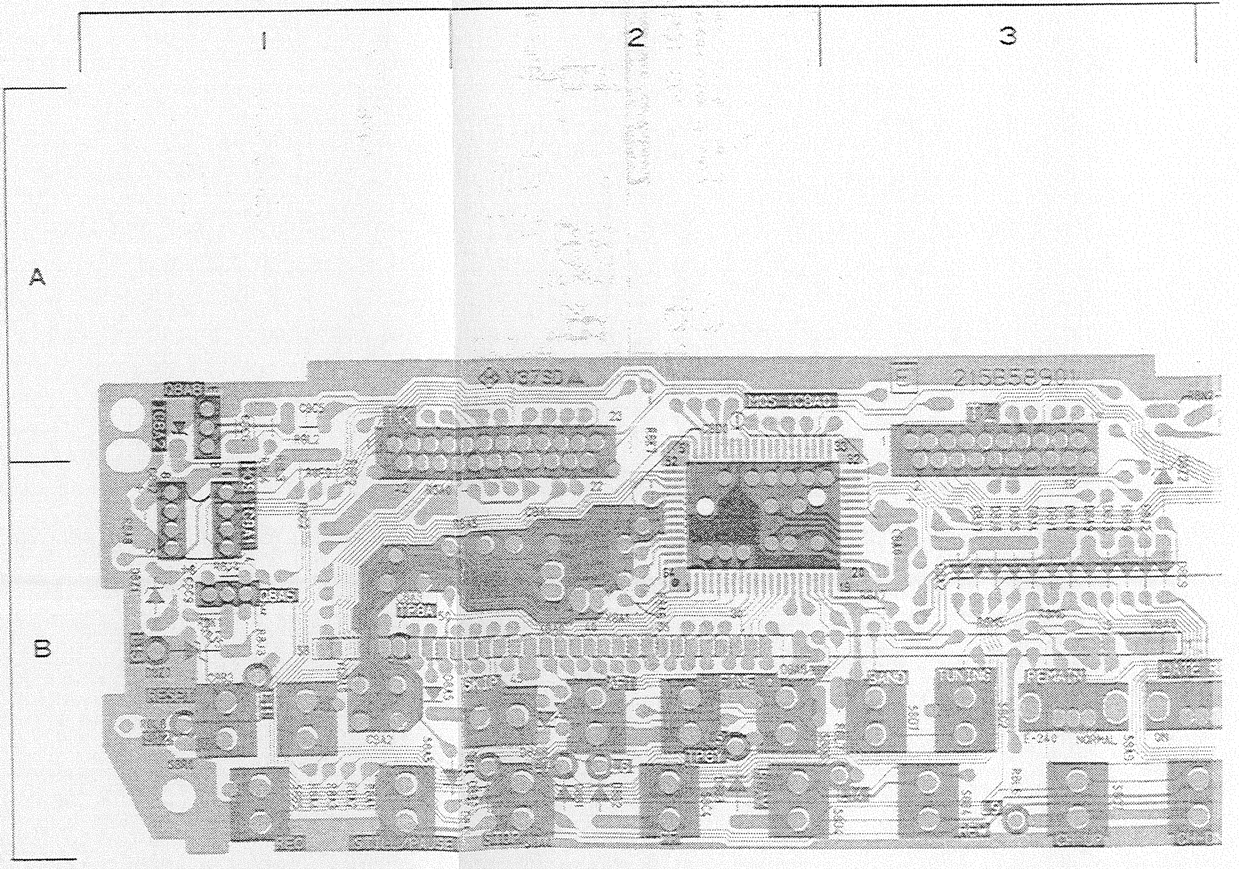

1
2
3
A
B
IC3304
IC3301

| SYMBOL NO. | ADDRESS |
|---|---|
| BPF3301 | B-3 |
| BPF3302 | B-3 |
| | |
| D3301 | A-3 |
| D3305 | A-3 |
| | |
| IC3301 | B-3 |
| IC3304 | A-2 |
| | |
| L3302 | A-2 |
| L3303 | B-2 |
| L3304 | B-3 |
| L3317 | A-1 |
| L3319 | B-1 |
| L3320 | A-2 |
| L3324 | B-3 |
| | |
| Q3301 | A-1 |
| Q3302 | A-1 |
| Q3303 | A-3 |
| Q3304 | B-1 |
| Q3305 | B-1 |
| Q3307 | A-2 |
| Q3308 | A-2 |
| Q3309 | B-3 |
| Q3310 | A-2 |
| Q3311 | A-3 |
| Q3312 | A-3 |
| Q3313 | B-1 |
| Q3314 | A-3 |
| Q3315 | B-3 |
| Q3405 | B-1 |
| Q3406 | B-1 |
| Q3409 | A-3 |
| | |
| TP3G | A-2 |
| TP3L | B-2 |
| TP3M | B-3 |
| TP3R | B-3 |
| | |
| VR3301 | B-2 |
| VR3302 | A-2 |
| VR3305 | B-2 |
| VR3306 | A-2 |
| VR3309 | B-2 |
| VR3311 | B-3 |
| VR3312 | A-2 |

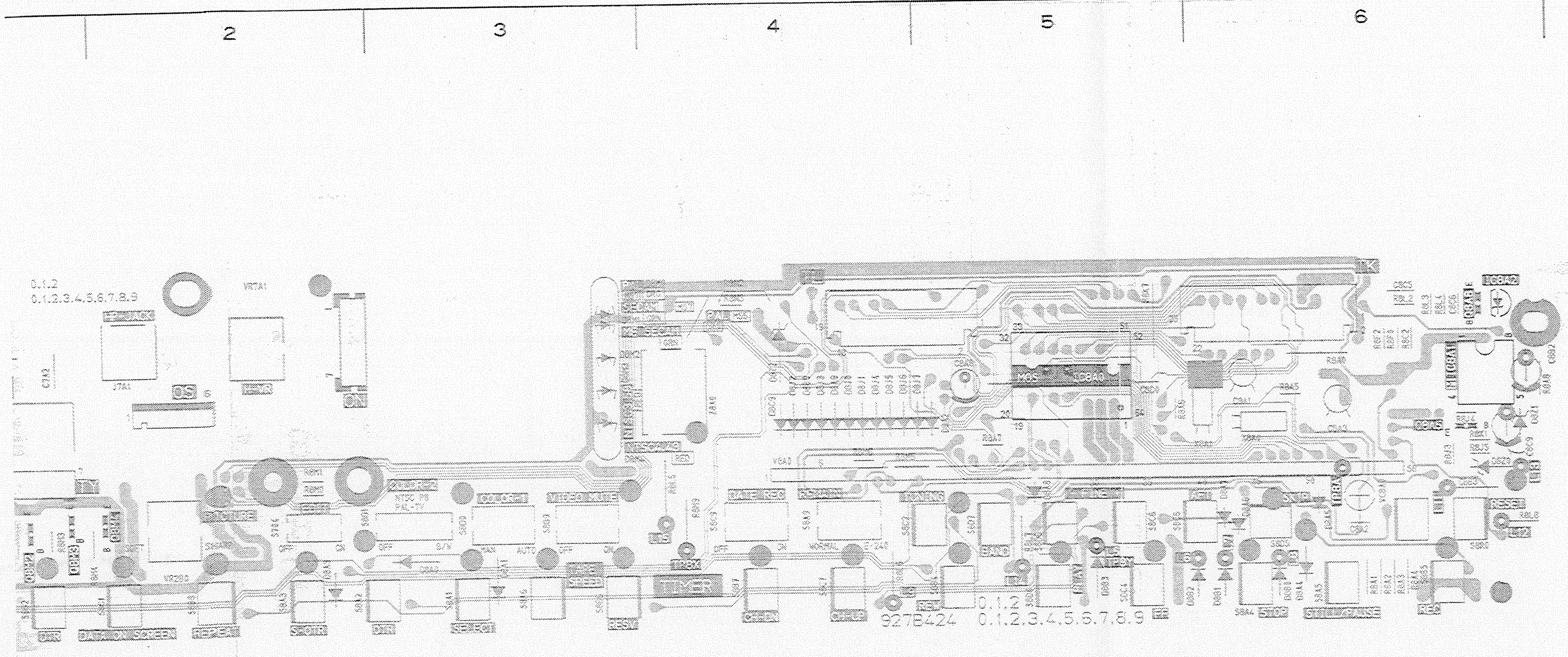
PCB-TIMER(COMPONENT-SIDE)


1
2
3
A
B
POWER
CH
OSD
REPEAT
SELECT

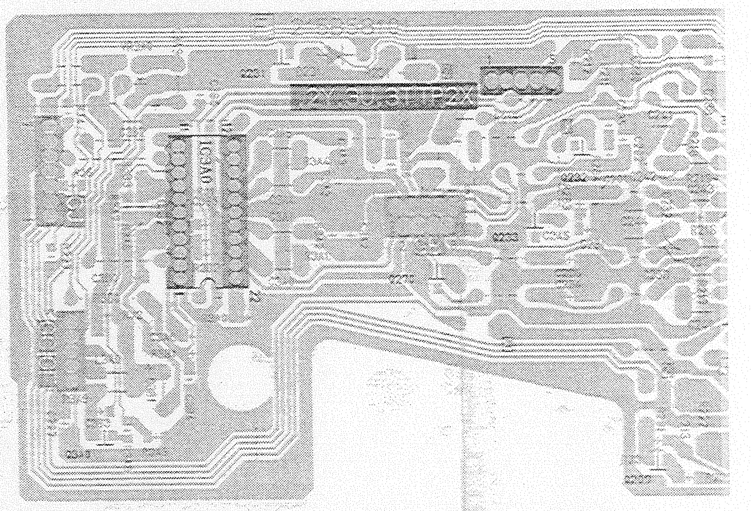
PCB-TIMER (COPPER-SIDE)



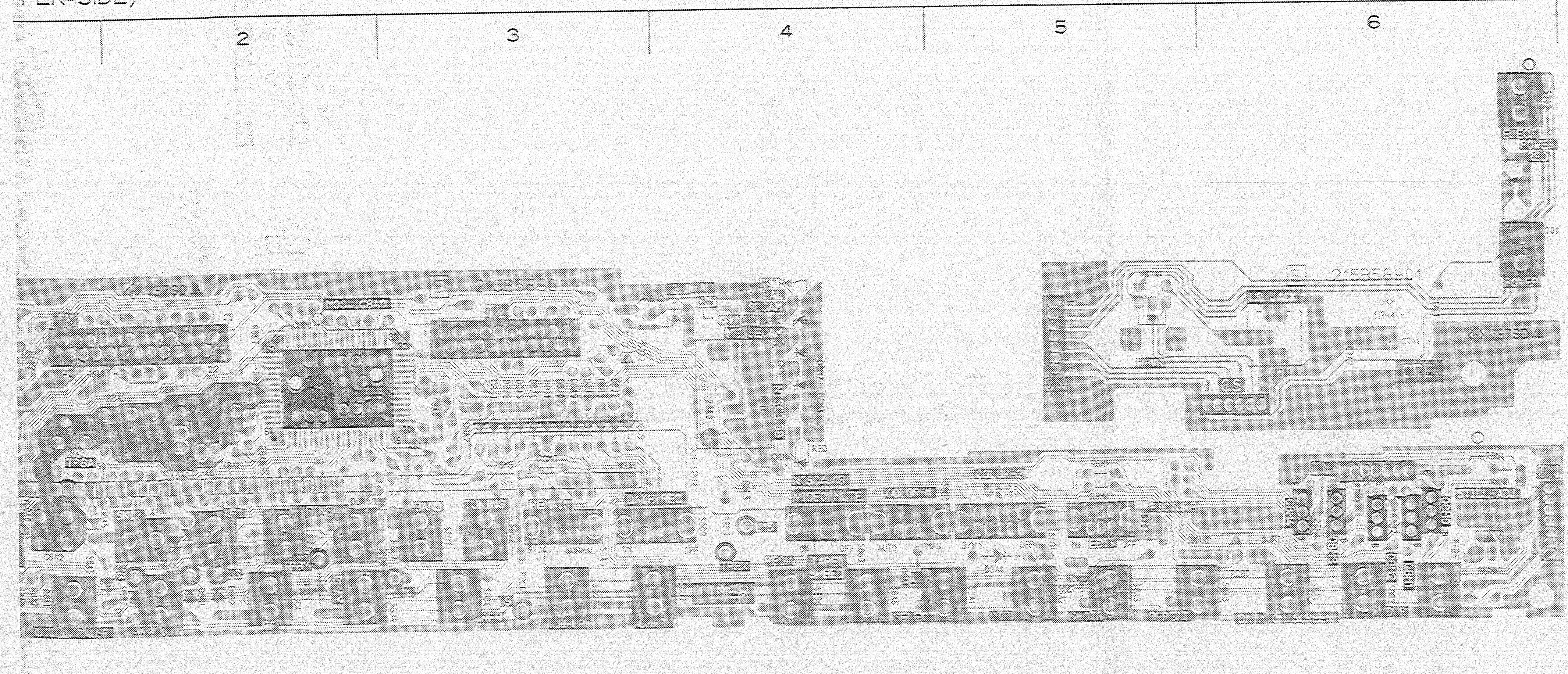
PONENT-SIDE)


2
3
4
5
6
0.1.2
0.1.2.3.4.5.6.7.8.9
TIMER
RESET
927B424
0.1.2
0.1.2.3.4.5.6.7.8.9

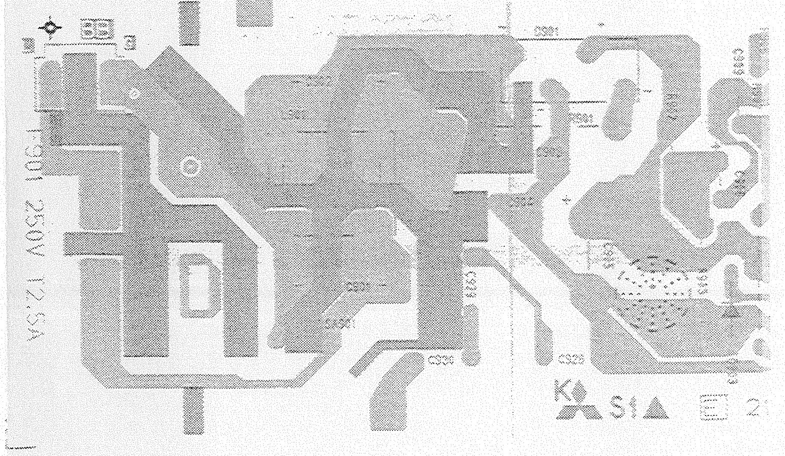
PCB-HEAD-AMP

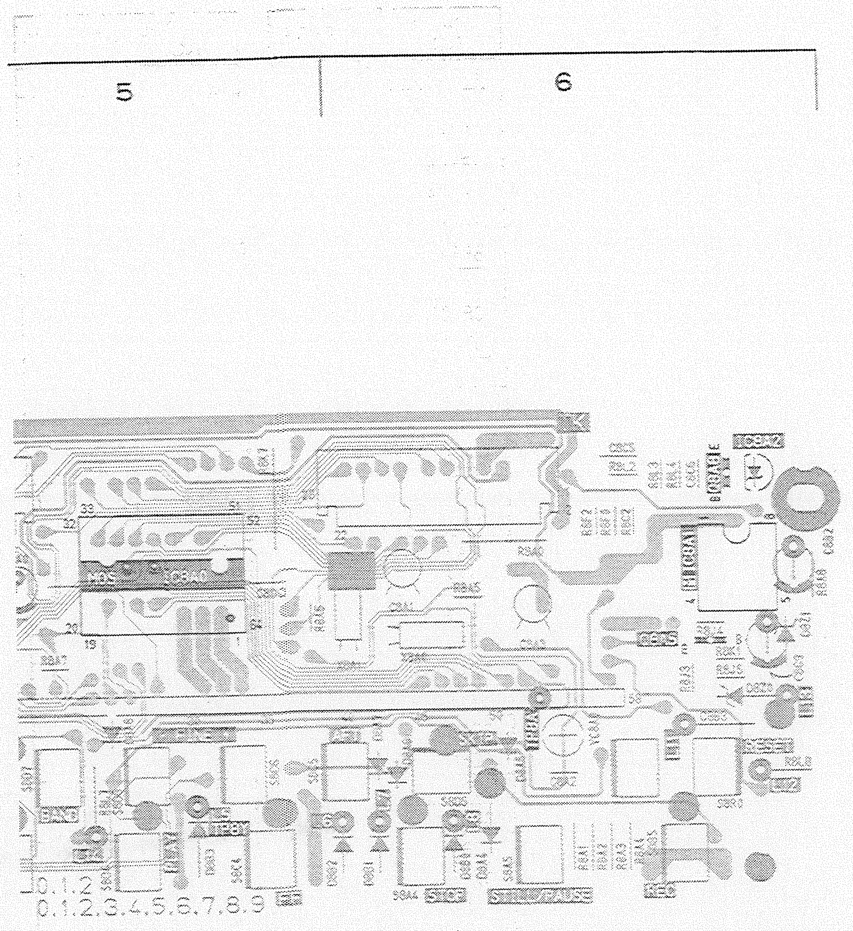


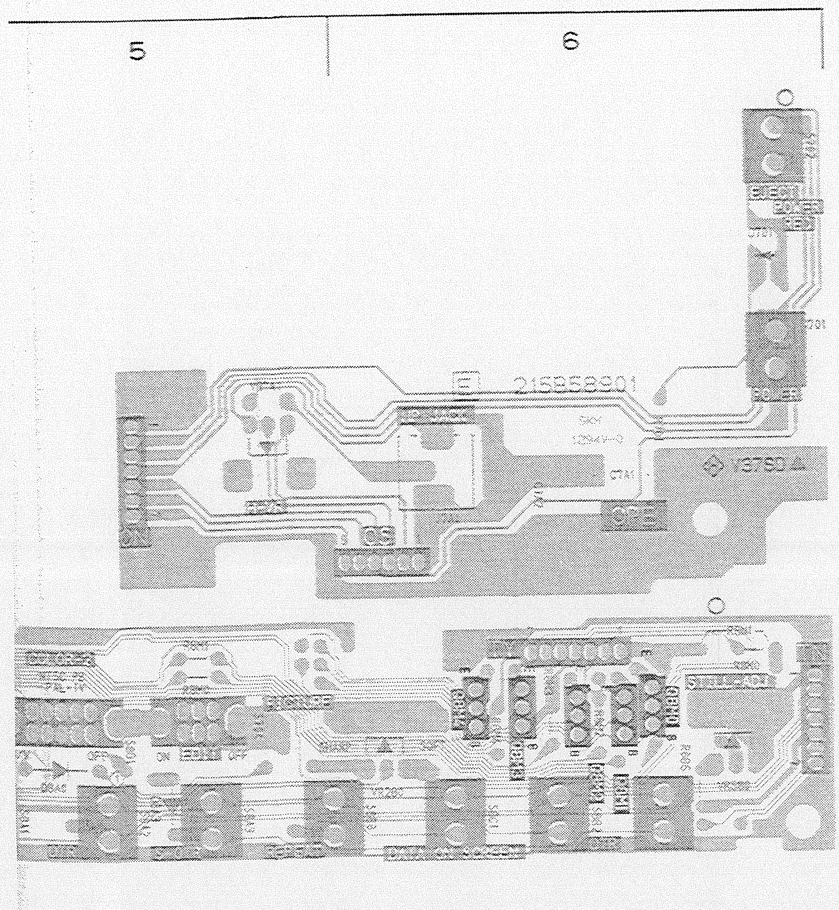
PPER-SIDE)


2
3
4
5
6
V37SD
215B58901
215B58901
V37SD
TIMER
POWER

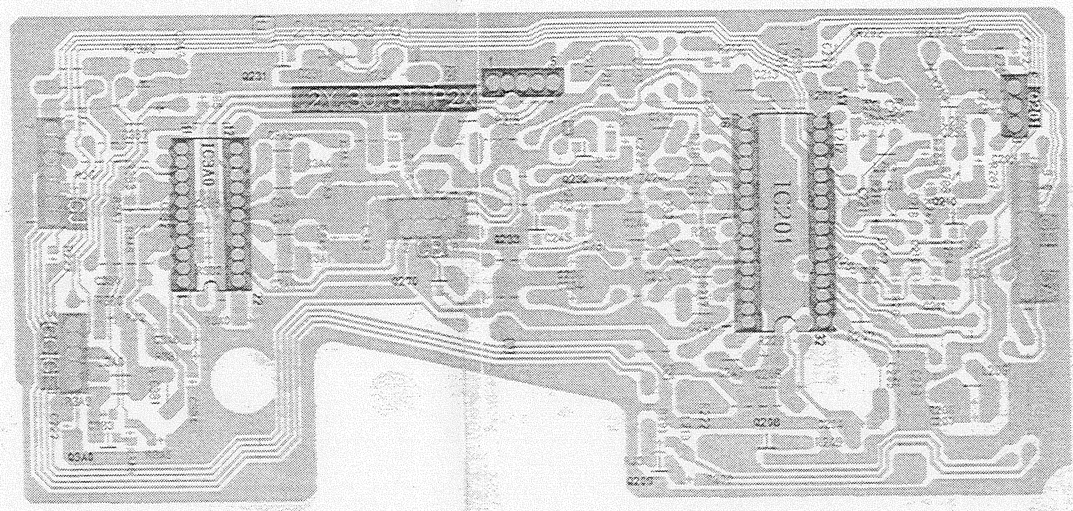
PCB-POWER


T301 250V T2.5A

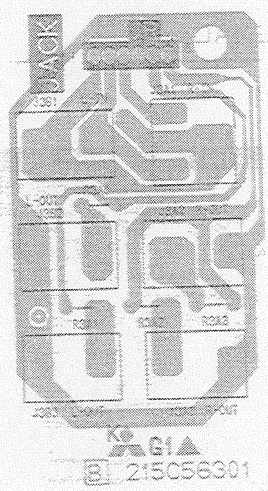

5
6
STOP
STILL/PAUSE
REC
0.1.2
0.1.2.3.4.5.6.7.8.9


5
6
EJECT
POWER
215B58901
V37SD
REPEAT

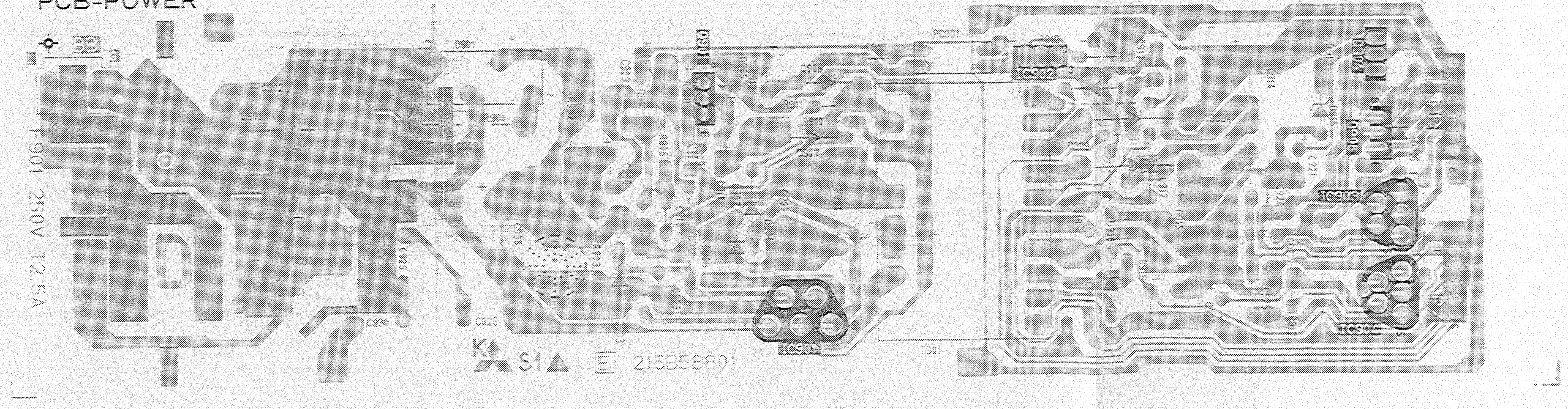
PCB-HEAD-AMP



PCB-JACK


JACK
G1
215C56301

PCB-POWER


F901 250V T2.5A
S1
215B58801
IC901
IC902
IC903
IC904